

"Two weeks ago I bought a 'Joan the Wad' and to-day I have won £232 10s. Please send two more."

—B. C., Tredegar, S. Wales

*Extract from "Everybody's Fortune Book," 1931.*



## JOAN the WAD

*is the*

**Lucky Cornish Piskey**

*who*

**Sees All; Hears All; Does All**

JOAN THE WAD is Queen of the Lucky Cornish Piskeys. Thousands of persons all

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If you will send me your name and address and a 1/- stamp and a stamped addressed envelope for reply, I will send you a History of the Cornish Piskey Folk, and the marvellous miracles they accomplish. JOAN THE WAD is the Queen of the Lucky Cornish Piskeys, and with whom good luck and good health always attend.

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One lady writes: "My sister suffered very badly for years, but since I gave her a Joan the Wad to keep near her she is much easier. Do you think this is due to Joan or the Water from the Lucky Well?"

### AS LUCK BRINGER

Another writes: "Since the War my wife and I have been dogged by persistent ill-luck, and we seemed to be sinking lower and lower. One day someone sent us a Joan the Wad. We have never found out who it was, but, coincidence if you like, within a week I got a much better job and my wife had some money left her. Since then we have never looked back and, needless to say, swear by 'Queen Joan.'"

### AS MATCHMAKER

A young girl wrote and informed me that she had scores of boy friends, but it was not until she had visited Cornwall and taken Joan back with her that she met the boy of her dreams, and as they got better acquainted she discovered he also has "Joan the Wad."

### AS PRIZEWINNER

A young man wrote us only last week: "For two years I entered competitions without luck, but since getting Joan the Wad I have frequently been successful, although I have not won a big prize, but I know that —, who won £2,000 in a competition, has one because I gave it him. When he won his £2,000 he gave me £100 for myself, so you see I have cause to bless 'Queen Joan.'"

### AS SPECULATOR

A man writes: "I had some shares that for several years I couldn't give away. They were 1/- shares, and all of a sudden they went up in the market to 7/9. I happened to be staring at Joan the Wad. Pure imagination, you may say, but I thought I saw her wink approvingly. I sold out, reinvested the money at greater profit and have prospered ever since."

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SCIENCE FICTION MONTHLY No. 9

FOUNDATIONS

# OLD GROWLER AND ORBIS

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No 9

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## **OLD GROWLER AND ORBIS**

by

**Jon J. Deegan**

No.

**9**

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● **Technical Editor : H. J. Campbell,  
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# projectiles

*Letters to the Editor . . .*

## GENTLE SEX

I do not believe the fair sex are immune to science fiction (see *Projectiles*, SFF, No. 3). Several of my friends read it, and as for myself I cannot read enough. I would very much like to take part in any attempt to reach the Moon, but according to most of the stories I have read, the gentle sex will be kept out of any such attempt. Like all interesting events, it will again be a male prerogative.

**MRS. B. GREENE (Birmingham)**

*We are glad to find you and your friends among our readers, Mrs. Greene. A suggestion: Why not start up a British Women's Interplanetary Society? Maybe you could beat the men to it. Determined women have done so in the past, and there's no reason why they shouldn't do so again. Count on us for support.*



## QUALITY

May I state that *Old Growler Space Ship No. 2213*, despite its unprepossessing title, far exceeds in quality almost any other items at present available from purely British sources with one possible exception. Naturally, comparison is difficult, the latter magazine publishing short stories. I have ordered

my wholesaler to supply me twenty copies of each issue for distribution in other countries.

**Capt. K. F. SLATER**  
(B.A.O.R. 15)

*Well, Capt. Slater, as the leading light of OPERATION FANTAST, you should know what you are talking about—having the whole field of science fiction at your fingertips. We are glad to know you approve of us, and are pleased to receive your testimony.*



## HUMOUR

After a little argument with myself I have decided to take out a year's subscription to your magazine, which you will find enclosed. That will show you that I am friendly—even when I start to criticise. First, your covers. I know other people have written you about them, but I must get my salvo in, too. Take issue No. 4. What kind of space ship lands nose down? Surely you know the tail landing idea? And is that snow on No. 5? On the Moon? In general I'd like to see some quieter colours, and less flaming reds and dazzling yellows.

The stories are good. That's undisputed. But could we have a few less monstrosities? My stomach isn't weak, but . . . I'd

like a little more humour, too. In fact, why not publish a story that's humorous all the way through? Deegan ought to be able to do it. And could we have more non-fiction? Book reviews are very useful, but I'd like to see a few articles occasionally.

**H. TEMPER (Leeds)**

*The next twenty-four issues are ear-marked for you, Mr. Temper. Thank you for of each month. Thank you for your comments about the covers. We are all the time trying to do better, and we promise you there won't be any more nose-down rocket ships. Some of our readers like to hear about queer beings on other planets, so you will have to put up with them now and then. Only now and then, though. Herewith the non-fiction you asked for. Are you going to have a try at the Quiz?*



## NOVELS

I hope you continue to publish SFF in the form that it now takes, i.e. the long complete novel as opposed to the short story. And I think that line drawings would be a great asset to the books. Speaking for myself, I like to collect the really good works in science

fiction and these books of yours are worthy of any collection.

**J. E. SMILIE (Leeds)**



## STORIES

They are above average... your authors have a very good style (Roy Sheldon's *Gold Men of Aureus* had some good passages), and let's hope they can do even better. One thing, you can improve your titles. I hope I haven't been too critical; you have the makings of a good mag.

**T. RATIGAN (S.E.23)**



## TABLECLOTH

*Krellig II* and *Old Growler* are good; there's a good series there. Lee Stanton writes well, but shows a lack of scientific knowledge. A rocket does not give a constant speed, but a constant thrust. And why on earth include such unnecessary rubbish as a tablecloth? Secondly, what use are stabilising fins when there is no atmosphere? And "temperature" is meaningless when applied to a vacuum.

**W. J. RUSHBROOK (Bokton)**

*Lee Stanton says it won't happen again.*

## monthly

During the summer months *Science Fiction Fortnightly* is to become *Science Fiction Monthly*.

Reason—there is now such a flood of science fiction on the market that for a while it is apparent that our sales will be seriously affected. So, until September, when we anticipate more normal conditions, we shall appear at monthly intervals only.

Quality will be maintained, however; you can be sure of that.



We have received two of the amateur magazines that are published by SF fans to keep themselves posted with developments in their favourite fiction field.

One is *SLANT*, put out by Walter Willis, of 170 Upper Newtownwards Road, Belfast, N. Ireland. It contains some very good stories, amusing articles and nicely printed illustrations—all by amateurs. Two issues cost 1/6, but if you send Walter Willis one current issue of *SFF* you will receive two copies of *SLANT* in return.

The other fanzine is *WONDER*, a mimeographed effort costing

6d. per issue. While not so large as *SLANT*, it contains a short story and one or two articles—the latter being of interest to flying-saucer fans. Editor is M. Tealby. Address is 8 Burfield Avenue, Loughborough, Leics.



We hope most of our readers will be able to visit the Festival Dome of Discovery and the Exhibition of Science at South Kensington. Kingpiece of the Dome is probably the Radio Telescope which allows visitors to see waves from the sun, stars and meteors, and to send messages to the moon.

Ian Cox, Director of Science to the Festival, and his team have done a magnificent job at South Kensington. No space here to give details, but the 10,000,000,000 times scale model of an atom sets the tone. Rutherford's "splitter" is working to show the physical basis of things, and a vast exhibit shows how atoms agglomerate into minerals, metals, and even life itself.

Maybe you could see it *all* in, say, a month.



## CHAPTER ONE

### THE CRY FROM THE ETHER

Of course I hadn't any right whatever to be poking round in the ship's communication sections, but the fact that I was there to hear poor young Billson's hair-raising cry across the ether provided a first-hand starting-point for subsequent adventures when I became a member of the rescue squad and laid eyes upon a form of intelligent life beyond most fantastic imaginings.

Spaceborne again after a four-month stay on Fellik, one of the planets of Vega, existence aboard Inter-X ship No. 2213 (*Old Growler*, as we called her) settled once more into impeccable routine. Spare a moment to consider the tremendous number of separate inquiries necessary for even a preliminary investigation after landing on a strange planet—new principles of chemistry and mechanics, different bases for astronomical observation, fresh varieties of vegetable and animal life, geological surveys, archæological treasures, ingenious systems of written communication, perhaps—all dating back to another world's beginning and all to be carefully assessed so that later expeditions of specialised scientific squads might not waste their time upon unworthy material.

My particular interest, as some of you may know, is botany. With mingled feelings of fascination and apprehension, I accumulated eighteen cases full of specimens. Pleasure of a scientist's natural satisfaction was tempered by the haunting thought that it would be necessary for me to dissect, tabulate and report upon each and every one of these morsels of queer vegetation during the weary weeks of our journey.

Somehow I couldn't become absorbed in the task. From time to time I felt an urge to leave my room and wander along the narrow, white-enamelled corridors to stare into a

visor screen or chat idly with some technician glad of an excuse to take a spell from his work.

I watched Fellik's gradually receding disc through telescopic, ultra-violet, infra-red and electronic view-plates until my eyes watered, then switched the things off and wandered along to the physics laboratories. Young Hartnell, one of my particular friends, sat in a chair tilted upon its back legs, and stared glassily at the far wall.

"Hello," I said. "Four days out—and already I've bored practically everybody else stiff with talking. Now I thought I'd come to you!"

He grinned vaguely and ran fingers through his thick, brown hair. On the table lay little broken heaps of a mineral we'd found which showed almost every indication of radio-activity—only it wasn't radio-activity. As a physicist, Hartnell's current task was to discover exactly why.

"Not speeding up much yet," I went on. "Don't suppose we shall till we get well beyond the ecliptic. One of the navigators tells me there's a meteor belt around these parts . . ."

He grinned again, still not looking at me, so I left.

In the photographic section I found Tubby Goss performing some delicate operation on the internal mechanism of a Nettar nuclear camera, pieces of which lay strewn all over the bench, and he wore such a frown of fierce concentration that I tiptoed away, closing the door softly.

The hush of interplanetary space began to grip the vessel. Somehow, even shut away among the ship's innermost cubicles, where Comis lights eternally shed their bright yet restful radiance, we always knew by some strange, subconscious feeling when *Old Growler* travelled within reasonable distance of a planet.

Hartnell had a theory concerning intangible influences of gravitation stretching out their imperceptible streamers to affect the general atmosphere. Right or wrong, there was no gainsaying the fact that in the vast depths of emptiness between the stars a certain terrifying stillness invariably enveloped us—an oppressive quietness which nevertheless was not entirely silent, for around us were all the little sounds of



the ship's activities, but which produced inexplicable pessimism and melancholy.

This was why headquarters insisted upon all personnel being kept busy—routine research on the outward trip, tabulation of collected specimens on the way home. Coupled with normal facilities for relaxation and exercise, reasonable diligence in a man's specialised work was usually sufficient to ward off the dreaded space-madness. At the moment we had two men under opiates in the special hospital ward.

Still unsettled, I wandered to the communications section—a series of small rooms crammed with elaborate radio apparatus—and found an operator named Williams, whom I'd known for some time. His particular duty that shift lay in one of the "local" networks.

"Busy?" I asked.

"Hello, Pop. Not for the moment. Come in and sit."

After the greetings I'd been getting in some of the other sections, this was a welcome indeed.

"Just finished all the routine calls," he went on. "As a matter of fact, I was wondering how I could best pass the rest of the time."

"Anything exciting?"

He pulled down the corners of his mouth in an expression of bored negation. "Very ordinary, Pop." He paused. "Wait a minute. This might interest you. Chambers on Kappa II—one of your botanist pals—sent in a report about—what does he call it, now?—a bracheate polygonaceæ with a specialised perianth."

Highly unusual, no doubt, but in my present mood I couldn't care less.

"Anybody I know on the outposts these days?"

It may seem rather peculiar that a space ship finds need for elaborate radio set-ups. The answer is that interplanetary exploration proceeds according to routine laid down as a result of past experience. Sending out an expedition of nearly 3,000 men is a long and costly business, and headquarters likes to get value for its money. All likely planets in any particular system are explored on one trip, with personnel left where necessary during the journey until the ship is ready

to depart for home. At predetermined intervals these outposts report how matters are faring with them, sometimes requesting technical instructions or being notified in return of altered orders. By the time *Old Growler* is nearing the finish of a "grand tour" there may be as many as forty or fifty detachments scattered among the orbits, each with its separate and useful job.

Technical difficulties associated with great distances entail a good many relay or "repeater" stations, in order that faint signals from far ends of a star system may be sufficiently strengthened for reception in the ship. Teams of two or three men install and maintain these stations for the period of the trip. Every squad also becomes the subject of special care, so that back in the ship shifts of radio operators are kept continually busy receiving signals or switching through direct calls to controllers.

All these channels of communication are known collectively as "local" networks. In addition, we talk at times with other ships, although even today this is often a chancy business and needs considerable skill to hold a workable beam in existence for more than fifteen minutes.

The reason for a radio section should therefore be clear, and in addition watch must be kept at all times on emergency frequencies in case some unfortunate explorer finds himself in distress. This last is, indeed, a dreary job for the operators concerned, who always have time on their hands, but I daren't toddle along to their part of the section because controllers have a nasty habit of dropping in.

So I chatted pleasantly with Williams for nearly half an hour, rising to leave when he said that Billson, one of the communications squad on Orbis, was due to present his report.

Williams pressed the coloured switch-key and cocked an ear at a faint hiss of static on the channel. "Stay if you like, Pop. He won't take more than a minute."

I looked at the clock's big, red sweep-hand smoothing away the seconds. Billson came on with that punctuality which characterises Inter-X personnel. (Otherwise, controllers are apt to become rather brusque.)

"Radar Engineer II Billson, K.K. Radio Detachment No. 435/1/A. Orbis map reference M45683799. Time: 22 hours 17 minutes Solar Standard Rating. Recorder on, please."

It might be important. Latest standing orders are not to record reports unless of unusual note. Young Hartnell's typically sarcastic comment was to the effect that even headquarters' vast filing vaults must find their limit sometime, and he for one, having experienced their gargantuan appetite for information, was thoroughly thankful.

Williams pressed the auto-recorder button, simultaneously switching on the controller's loudspeaker and flashing an alarm light. He glanced across at me, raising his eyebrows inquiringly. Baffled, I shook my head.

Billson's voice was pitched in that unemotional monotone encouraged for official records, yet I detected a certain urgency, if not actual fear. He repeated his own description, name and location, then continued: "Operations on installation of Mark VI electronic repeater unit No. 7214/2/24, location M45683799 Orbis, suspended as from 18 hours 42 minutes Solar Standard Rating following death of Radar Engineer III Weber, Emmett. At aforementioned time, upon waking, I discovered Weber dead in his bunk in repeater-unit housing where we had taken up our quarters although roof was not yet in position. He had been attacked during the night by some unknown creature and his body drained of blood through numerous small punctures mainly on hands, although others had been driven with exceptional power through atmosphere suit in which he was sleeping. I heard no suspicious noise during night. Bannerman Mark I precautions were not taken by reason of report by Security Squad (Physical) No. 72 that in tests over fifty square miles Grummett detectors registered no trace of animal life. Until this time no animal specimen had been observed on Orbis. Preliminary report concludes. Further instructions now awaited."

And while the audio-receiver croaked those grisly, matter-of-fact sentences, I pictured Billson there alone on Orbis—some ten hours away from the ship—with a companion who

had met a dreadful death and an unseen horror lurking over him.

Whatever feats of self-control Inter-X expects from its men, there are limits to the human frame. Williams knew it as well as I did. He pressed another button and said, "Recorder off. Controller speaker off."

"Is that Williams?" gasped Billson. "Listen, Joe—it's horrible. Poor old Weber—I've never seen anything like it."

"Couldn't you really find any trace of the thing that got him?"

"It must have climbed the walls and flopped down on the inside. How in Altair did the security squad miss anything like that? If they'd——"

"Controller!" said Williams, warningly. "Switching over."

I listened while cross-examination and instructions went across the ether to Orbis. Obviously, neither Billson nor the controller was very happy about the two installation men sleeping at the incomplete unit-housing instead of the small ship which had taken them and their equipment to the scene. The powers-that-be would make up their minds later whether there had been a definite infraction of the rules. Personally, I knew the explanation—the permanent bunks provided for repeater-unit personnel were a good deal more comfortable than cramped quarters in the ship. Why worry if the housing remained part-open to the sky? The detector squad said there were no animals.

These reflections were rudely interrupted by a call of alarm through the loudspeaker.

"Oh!" said Billson, in a low, horrible voice. And again, "Oh!"

Those two simple syllables contained more spine-curling terror than I ever hope to hear in a human voice again. It was as though the man's vocal chords were frozen by the awful thing he saw, so that air from his suddenly contracting lungs passed over them with a hollow, moaning cry.

Then Billson screamed. "It's here again!" he shouted. "Get a botanist! I don't understand . . . ! A botanist . . . !"

I leaned forward, staring at the loudspeaker in bewilder-

ment and gripping a metal corner of the radio bench so fiercely that it tore my hand.

"A botanist?" exclaimed the controller. "Explain."

Only the hiss of static came to our straining ears, intensified as the operator stepped up volume. I imagined a faint, rustling sound, but it must have been merely atmospheric.

How long we waited I do not know. The spell was broken by signal lights flashing over a ship's telephone. "Continue to listen on Orbis channel until further notice," instructed the controller. "Switch on recorder and notify immediately if further signals are heard."

I saw Williams press a button and a moment later another radio operator, Lance Connelly, came in. "Nice job for you," said Williams. "Something's just got Billson, on Orbis. We heard it over the ether——"

The other's face crinkled in horror. "You heard it?"

Joe Williams nodded. "That's right, isn't it, Pop?"

"Yes," I said, sombrely. "That's right."

"He was talking over the repeater channel and the power's still on. Your job's to listen in case he comes on again." He pursed his lips, doubtfully. "Somehow I don't think we'll hear any more."

"Well," I said, "I'll be on my way. Looks as though you'll need your ears for something better than listening to my idle chatter."

I strolled back to my own part of the ship, immersed in dreadful speculation. Had Billson been overtaken by the same fate as his comrade, Weber? But why that urgent shout for a botanist? Could Weber have been killed by some kind of plant? Carnivorous vegetation exists in some variety upon a number of planets, but none so far known could kill a man without causing sufficient noise to rouse a sleeping companion. And how could such a plant find its way into a repeater-unit housing, which consists of prefabricated, triphenium sections, complete with floor. Perhaps Billson and Weber occupied such shelter with not only roof but also floor partly installed, in which case apparently harmless vegetation on the floor might have assumed dangerous characteristics unseen in the sun or night.

Mention of such theories to young Hartnell succeeded in tearing his attention from those confounded lumps of rock. "I'd say that's the explanation, Pop. Why, the very tone of poor old Billson's report is dripping with excuses. Both of 'em knew they'd no right to sleep in the station till it was complete, but they thought it might be more comfortable." His lean, brown face assumed unwonted solemnity. "Now they've learnt their mistake—too late. You know, Pop, nobody's cursed Inter-X regulations more than me at times—but you've got to admit the old so-and-so's back at headquarters really know their stuff in some respects."

"The security squad . . ." I began, rather helplessly.

"No. 72, wasn't it? I know old Schultz well. He'd never do a shoddy job. Let's have a word with him." He grabbed a telephone, while I picked up the extension receiver to eavesdrop.

"Something got Billson, you say?" exclaimed Schultz, incredulously, once the friendly preliminaries were over. "Weber, too? You can take my word for it, there wasn't anything bigger than a dehydrated cheese-mite in the fifty-mile test area. We put the Grummetts on six different arcs and never got a single needle-flicker. Eh? What do you mean? Of course the Grummetts were in working order."

Hartnell's shrewd but probably tactless question necessitated a good deal of subsequent soothing. However, Schultz was eventually persuaded that our cross-examination provided good rehearsal for an inevitable session with the controllers. "There's one thing," he concluded; defiantly. "You'll never convince me there's any animal life on Orbis."

"What's the place like?"

"Absolutely dreadful. Smothered with rain forests hundreds of feet high—hot—moist—stinking! If those confounded clouds hadn't prevented long-distance observations, I'm certain even our hard-hearted bosses wouldn't have sent anyone to make a landing."

I couldn't be bothered arguing with him about the need for a radio repeater station on Orbis. How else to keep far-off detachments on Fellik, Rogoso and Epsan II in touch with the ship? Five months later, of course, with the planets

swinging in their orbits from conjunction to opposition, the repeater's usefulness would end, but by that time I hoped all would be dismantled and *Old Growler* on her way home.

We hung up on Schultz and I said, "Exactly why did Billson say, 'Get a botanist'?"

Hartnell shrugged. "Wanted advice about the piece of vegetation that grabbed him, I suppose." Involuntarily, I shivered. "Wonder whether they'll trouble to send one?" He paused, meaningly. "You're a botanist, Pop."

"Don't look at me," I said.

The alert sounded suddenly on all loudspeakers. "This is emergency," said the navigation announcer, as calmly as though inviting all listeners to a ship's tea-party. "Fourth-degree deceleration and turning commence in fifteen minutes. Routine Five applicable immediately."

"What in Betelgeuse are they up to now?" demanded Hartnell, irritably, commencing to collect his precious specimens.

I thought of Tubby, with dozens of tiny cog-wheels and screws from the internal mechanism of his camera strewn along the bench. If they weren't already reassembled, I hoped he'd scramble them together in time. Deceleration, of course, means that all loose articles, possessing separate momentum coinciding with that of the ship, are apt to shoot towards the forward bulkheads when bow-engines fire. Fifteen minutes' warning is considered sufficient time in a fourth-degree emergency for everything to be clamped down and safety-belts adjusted. Time is cut progressively according to the degree of urgency, until in a first-degree emergency the ship may manoeuvre with little or no warning—and I only hope I'm never aboard any vessel which does so.

"Attention!" The loudspeakers were in action again. "The following personnel will report immediately to Control Room No. 14A." Five names were given, including Hartnell, Tubby and myself.

Young Hartnell's face was one huge grin. "What did I tell you, Pop? Now we'll know why Billson wanted a botanist."

## CHAPTER TWO

### JUNGLE-WORLD BENEATH THE CLOUDS

Ten minutes later we learned the reason for that sudden deceleration warning. *Old Growler's* steady cruising speed was being slowed in order to launch one of six smaller ships stowed in a great bay beneath the main gravity-hold—and we were to travel Orbis-bound for the purpose of investigating sinister happenings in that polished, triphenium shed.

Four minutes more and we were lying back in the snug clasp of safety-belts awaiting impulse-shocks when blasts of atomic hydrogen spurted from the forward engines. Despite many other discomforts, I always find these occasions the most disconcerting of all space-flying. It is the same at the beginning of every voyage—long, weary hours, sometimes days, of comparatively violent acceleration, often followed by weeks of more gradual speeding-up during which more or less normal pursuits are possible.

Approaching a landfall, the same monotonous procedure applies in reverse, bringing with it again a prolonged sensation of head-swimming nausea. Trouble is that flesh and blood can resist only a certain amount of strain. When we're dealing with speeds running up to many thousands of miles a second in the vast amphitheatres of space, acceleration and braking must be handled with infinite delicacy and patience. Very often, in fact, on "short" runs, more time is spent in accelerating and braking than upon the actual voyage.

But at the moment our navigators merely had in hand a slight manoeuvre in order that the ship might not run too far beyond Orbis, for every million miles we continued on our present course meant additional journeying for the slow-flying small vessel carrying the investigation party.

"Turning, too, eh?" mused Hartnell. "They're certainly anxious for us to reach Orbis as soon as we can. Any idea



about speed and direction, Pop?"

I shook my head. "Seems reasonable to suppose they're swinging her to intersect the orbit."

"Which peeper are we taking?" 'Peeper' is spacemen's slang for the small scout ships carried by parent vessels—neat little craft but capable of carrying a crew and considerable load on quite lengthy trips.

"Hope we get *Little Growler*," said Hartnell, enthusiastically. "Last time I—ooph!" Deceleration impulses knocked the breath out of him, in common with the rest of us, and for the next few minutes none of us felt like speaking.

"I—suppose—" I said, at last, dropping out the words rather painfully, one by one, "—you're—looking forward—to driving—the thing again."

His expression was eloquent while he tried unsuccessfully to 'subdue delighted anticipation. In this rigid, regulation-bound age, young Hartnell is very much of an individualist; consequently nothing pleases him more than to escape the clutches of routine and act alone. Couple this with the fascination of an elaborate mechanical toy such as a scout ship and his pleasure becomes unbounded, although nothing will make him admit the fact.

"With him as pilot," said Tubby, grinning, "I'm not at all sure I shan't ask for a transfer—while I'm safe!"

"I'm the only one of the five who's taken a course in pilotage and navigation," said Hartnell, smugly. "Not that I'm anxious to be cooped up in a peeper for any length of time. But if the job's got to be done . . ."

I looked at Tubby and winked. "Of course," I agreed, solemnly. "Of course."

Two men detailed to accompany us were Hamilton and Reddy, a couple of cheerful young radio engineers whose task was to complete installation of the repeater station.

When deceleration reached limits where we might safely move about, we trooped to the storage bay to find a scene of frenzied but orderly activity proceeding near one of the scout vessels.

"*Little Growler*!" exclaimed Hartnell, rubbing his hands in satisfaction. One of the steering fins swept down to within

eight feet of where we stood. Hartnell reached up to pat the outer plates affectionately and would have rushed to the control cabin there and then, I believe, had not an equipment official demanded signatures on a sheaf of documents.

Formalities involved clearance by engineering and maintenance squads; by storage, fuel and provision sections; by electricians, instrument adjusters and equipment loaders. How any pilot could be supposed to know that all these jobs had been carried out satisfactorily is beyond belief, but—theoretically, at least—his signature upon such forms indicated that the ship was well-found and spaceworthy in every respect. The procedure was laid down by regulation; consequently nobody would be happy unless it were carried out to the letter.

Hartnell accepted his responsibility light-heartedly. His only anxiety was to reach *Little Growler's* controls and set the ship under way.

I stood on the floor of the bay and watched him climb the tall ladder to the entrance port. I could never rid my mind of the fact that beneath the insulated surface on which my feet rested was—nothing. And always I experienced the foolish, horrified presentiment: "Suppose the bay opened prematurely."

It was the old, primitive fear of falling, and not without an effort could the new, civilised knowledge impress upon consciousness that falling was impossible—because there existed nothing in which to fall! Our bodies as well as the space-ship swung in an artificial orbit that varied its curve and direction only when the engines operated.

Thus it was that when we were safely aboard and the warning hooters sounded, when the great doors swung downwards to reveal black velvet studded with a thousand shimmering stars, repulsor mechanisms heaved out powerful arms to push us clear of the parent ship before our motors started. Once that momentum had been imparted, without independent means of guidance and propulsion, we might have drifted for ever in the same direction, free as we were from friction and gravitational attraction in the void.

I went to the navigation cabin, where Hartnell sat amid

the hundreds of coloured switches and flickering signal lights, to stare through a visi-screen while *Old Growler's* sweeping, impressive bulk gradually receded. In the two vertical rows before the pilot's seat, one on either hand, ran illuminated automatic-register panels. Aligned with each panel extended groups of two to seven meter-dials, together providing every imaginable iota of information concerning the ship and its engines.

A green light blinked three times. A voice from the big ship's navigation cabin announced, "Independent control available now."

"Ah!" said young Hartnell, happily. He played for a few seconds with various control buttons, making the signal lights twinkle furiously, before clicking over the loudspeaker switch. "All personnel adjust safety-belts. Acceleration in fifteen seconds."

Tubby grinned as we sat down and obeyed instructions from the new captain. "All personnel. You and me and those two coil-and-valve merchants back there."

"Don't spoil his fun," I said. "Incidentally, where are Hamilton and Reddy?"

"Last I saw they were crooning over their repeater contraption, saying they'd got the very latest model or something. It's all neatly stacked in pieces in the after-hold. Right now I hope both of 'em are tucked behind their safety-belts. I've known Hartnell at the controls of a peeper before."

But the journey began comparatively smoothly, and little more than an hour passed before we were able to walk about the cramped companionways of the ship.

Hartnell's fingers stabbed the keys of an electronic computer, which whirled and clicked vigorously before emitting strings of figures on a paper tape. Seeing that the answer confirmed speed and direction instructions supplied by *Old Growler's* navigators, he switched in the automatic pilot and leaned back in his chair with a satisfied sigh.

Anxious to see once more what went on outside, I swung a telescopic viewer across the sky. Barely perceptible among thousands of blazing pinpoints, the big ship was now reduced

to a dim speck, Vega's bright beams reflecting from her polished sides. Guiding round the ranging handles, I located Orbis—a silvery, featureless disc. We were not yet near enough to observe the swirling clouds which prevented all sight of the planet's physical characteristics. Beneath those atmospheric layers, judging from what Schultz had told us, lay a most uninviting world—hot, moist and fetid, where rank jungles covered the earth. And the unbroken smoothness of the planet's appearance on the screen heightened my sense of foreboding, as though I gazed upon some blank, horrible, mysterious face without eyes, nose or mouth.

Considering the necessity for a “blind” arrival by radar, Hartnell brought *Little Growler* beautifully to land. Far from being expert in such matters, I computed the radar observations with some trepidation, trying to hold the sighting grid firmly on map reference M45683799 while keeping my other eye on the electronic altimeter readings. A corner of my mind meanwhile cursed at a sudden realisation that our peeper was out of date in at least one respect, because I'd heard quite recently how in newer ships such readings are linked with the automatic pilot and the retractor motors, thereby enabling landings to be effected with practically no effort on the part of the crew.

We brought her very slowly through the three-mile cloud layer, finding somewhat to our perturbation that the swirling, oily vapours lowered themselves to within a couple of thousand feet from the tree-tops. The radar screen showed our proposed landing path to be virgin forest, free from treacherous, rocky outcrops.

I had a second's glimpse of dense, dark-green vegetation—matted as far as the eye could see into a thick, repulsive carpet. Then everything became blotted out by great banks of flame and steam. Exhaust blasts from forward motors sliced a smoking swathe through the tangled jungle immediately ahead, leaving a black, stinking mass of charred vegetable matter on which the ship laid herself with scarcely a jolt.

We had arrived on Orbis, ready to see what had happened to poor young Billson.

## CHAPTER THREE

"I TELL YOU—SOMETHING MOVED!"

We had come to rest well below tree-top level. Spaceports showed tangled branches, lianas and creepers knotted into an inextricable mass right up to the windows as plants battled for air and light. Of water they certainly had no lack, for drops bespangled every leaf and twig, combining in their thousands to send constant rivulets trickling down lichen-covered bark.

As I said, the vegetation was green, indicating that chlorophyll and photo-synthesis were at work. Here, at least, I felt on comparatively comfortable ground—in fact, it was by no means the first time I had had cause to feel thankful that so far, with three rare exceptions, plant life throughout all star-clusters explored sprang from the same base of nitrogen and carbon.

I thought about this, feeling thankful that my business lies in immobile living things and that even here on Orbis the old, familiar principles of vegetable structure held good. Immobile? Perhaps after the episode of Weber and Billson I ought not to be too definite.

Our first job was to locate the repeater station site.

"You did very nicely with the charting, Pop," said young Hartnell. "The locator gives our position as M45673781, which means we're within a couple of hundred yards. Wonder we didn't see the ship's trail as we came out of the cloud."

"There wasn't much time," I said, apologetically.

"Judging by the look of things out there," said Tubby, with disgust, "we might as well be a couple of miles off. How in Sirius are we going to cut a way through?"

"Probably won't be any need. In most rain forests

growth rots away at ground level because there's no light or air. I expect there'll be natural tunnels of sorts."

Tubby looked out upon the mass of tangled branches, like great nests of writhing green serpents frozen into stillness, and pulled a face. "Swamps, too, I suppose."

I nodded, solemnly, and even Hartnell, catching our eyes, became subdued, for all of us remembered dreadful shapes which had crept upon us during the night out of that morass on Karmah.

"At least," said Hartnell, comfortingly, "Schultz's detectors would have spotted anything hiding there."

"He only covered fifty miles. It might have crawled here by now."

"You miserable pessimist, Tubby! Let's get that Grotterling camera airborne."

The Grotterling is a simple but ingenious apparatus that has proved its worth in many ways. A gravity-reactor, similar to that used in the Bergmann Mark V atmosphere suits, sends the things to a predetermined height, where a camera, trained at any desired range, exposes a fully circular panoramic shot of the immediate area.

I watched Tubby, wearing a protective suit, float the machine through an outlet port in the upper pressure chamber, seeing the hooded lens complete its rotation with a click. He brought the camera back to the control cabin and while we waited the twenty seconds necessary for the picture to emerge, Hamilton and Reddy came along.

"Where do we set up the station?" asked the latter, beaming expectantly.

"Yes, where?" echoed Hamilton. They stood with eagerness shining from their round, young faces, obviously possessing no thought other than to assemble their precious piece of equipment.

Hartnell waved his hand towards the view-port and their expressions became almost ludicrous with disappointment.

"Dreadful!" said Hamilton.

"Awful!" exclaimed Reddy. "Will hydroxylene manage to clear a space in that lot?"

"Not far away there should be a site used by Weber and Billson."

"Our first job's to find what happened to them," I said.

Tubby spread before us on the stellar-chart table a circular picture, superimposed across it the direction grids which the Grotterling automatically included. Amid the dark blur of the forest lay a bright, almost square, object surrounded by a patch of brown earth. A few hundred yards to the right rested the peeper which had brought Weber and Billson to Orbis—behind it stretching a scorched trail similar to that made by *Little Growler's* braking blasts.

"I said you'd done a good job, Pop," declared Hartnell. "Why, it's only just over the tree-tops. Wonder we didn't hit it coming in."

"The others managed to get their assembly through the jungle," remarked Tubby. "Why shouldn't we?"

"Put on the atmosphere suits," I suggested, "and we'll explore. You radio engineers might as well come with us. Better have a look at that other peeper. Don't forget you've got to fly it back."

The air on Orbis was breathable after a fashion, although containing rather too much carbon dioxide for comfort, which was rather surprising considering the vast amount of vegetation the planet sprouted. Somehow, though, spacemen always prefer to wear suits, and in the present instance they were certainly called for, otherwise we would have been soaked to the skin in less than twenty paces.

Everywhere moisture dripped miserably. Our feet sank into a porridge-like quagmire composed of rotting leaves that, judging from a quick whiff I took through the helmet test-valve, might have been accumulating since the beginning of time. As I anticipated, on lower levels all leafy growth, deprived of air and light for promoting its proper functions, had perished, leaving large, irregular tunnels through the towering forest, where branches intertwined overhead, shutting out all light save that which filtered through crannies and left us groping in ghostly gloom.

We progressed through continuous showers of water-drops falling from great, horrible leaves fifty feet overhead.

Apart from their splashing on our helmets and the soft, creepy sigh as they hit the morass beneath, all was silent—a haunting semi-silence which kept us nervously on the alert.

It was too quiet to be true. No breath of wind disturbed the jungle in that hot, steamy air. In the darkness of forest caverns, vapour wreaths floated motionless, caressing with their miasmic touch the beard-like growths of lichen decorating huge creepers that soared like tangled hawsers high into the dim masses above. Here and there great, spongy fungi sprouted from the decaying floor, bursting into wet, broken flesh at the merest touch of a boot. Everything appeared in shaded monotonous of green and loathsome white. No touch of colour relieved the scene; no sound of startled bird or scuttling creature interrupted the faint, persistent hiss of falling drops and the regular squelching of our footsteps. After visiting sixteen different planets, I had never known more dismal surroundings.

"Looks as though Schultz was right," commented Hartnell. "No animal life here."

"There's enough of other kinds for me," said Tubby, eyeing with marked distaste a monstrous puffball affair lurking in the gloom on our left.

"Hot enough, too," said Hamilton. Truth to tell, I'd forgotten the radio engineers plugging doggedly along behind.

"Yes, indeed," supplemented Reddy.

It seemed as though neither of these two young men was able to speak without the other being obliged to contribute a kind of echo.

"Remember Fellik?" asked Hartnell, unnecessarily. "That was hot and dry; Orbis goes in for being hot and wet. All these Vega planets seem real scorchers in one way or another."

Thanks to the natural tunnels on the forest floor, our progress was far swifter than expected. Once Hartnell found himself unable to extract a foot from the treacherous, evil-smelling compost and began to sink. Only swift adjustment of the gravity-reactor in his suit helped extricate him from what might well have proved a bottomless pothole, because it



happened far too quickly for either Tubby or myself to grab him.

At last we cut through leafy obstructions to find ourselves in the clearing made by Weber and Billson. There, in the centre of a patch stripped by their hydroxylene spray, stood the unfinished repeater-unit housing, its radio aerial glinting in the bright light which filtered through those enveloping clouds. No one was in sight.

The interlocking triphenium structure had been erected completely except for one roof section, which lay ten yards away.

Rather gingerly, I slid open the door and looked inside, noticing immediately that the flooring had been laid, which disposed of any theory about Weber being seized by vegetation left growing near his bunk. Only means of entry was up the wall and into the housing via the roof gap. But again I asked myself: What did Billson mean by saying, "Get a botanist"?

"Careful, Pop," warned Hartnell, close behind. "The thing may still be here."

"Don't worry," I said, grimly. "I'll be careful."

"The thing"—whatever it might have been—was not there. Living quarters—a room approximately fifteen feet by ten feet—was deserted. On our left stood the two bunks—one with rumpled covers, the other bared to its springs. On our right the door providing access to the repeater-unit machine remained ajar.

Standard repeater-unit housing are turned out in quantity by one of headquarters' Production sections. More often than not, of course, the stations operate unattended; now and again it becomes necessary to leave one or more engineers on the spot, in addition to the fact that servicing or installation may on occasions take some time. Living and sleeping accommodation is provided at the stations as a matter of course, whether needed immediately or not, because Production's experts consider it simpler and more economical to set up their automatic machine-lines for one model only.

Beside the smooth, grey protector-sheets round the apparatus—a square chunk composed of countless valves,

coils, insulators, condensers and the usual radio paraphernalia—layed an outstretched figure in an atmosphere suit, staring sightlessly at the roof through a morynium facepiece.

The red pilot light shone steadily on the subsidiary panel—a bunch of instruments which enabled the repeater to be used as a separate transmitter in addition to its purely automatic relay duties. A gentle hum, easily noticeable in the uncanny stillness, showed that power from the Lammington accumulators—newly charged with a twelve-months' supply—throbbed strongly through the machine.

The form on the floor was Billson. He was horribly dead.

From the outer door Tubby suddenly gave a cry. "Look! Over there on the other side of the clearing. Something moved!"

"I don't see anything," said Hamilton.

"Nor me," added Reddy.

"Pinkish-coloured," said Tubby. "It's flitted away among the trees."

Hartnell grunted. "What sort of creature? A bird?"

"I don't know. I didn't see properly, but I tell you—something moved!"

## CHAPTER FOUR

### WHERE ARE THE VAMPIRES OF ORBIS?

Billson's dreadful pallor left no doubt that practically every drop of blood had been drained from his body, even before I took a sharp knife and made a small slit in a vein of the left ankle. Far from oozing the usual thick, black fluid, the sides of the vein—only a small one—were almost clean. Only injuries we found were uncountable tiny punctures, like brown pin-pricks, scattered about his hands, and this fact in turn provided further speculation—how could the normal man's ten or eleven pints of blood have been drained through such small apertures?

"The suction must have been enormous," said Hartnell.

"Or else it took a long time."

"But by that yell you heard him give he must have been overcome almost at once."

I thought about this for a few seconds. "Shock," I said, at last. "Shock might have done it. After all, the hands are a very sensitive part of the body, especially the palms. Look at the number of those punctures—most of 'em pretty deep. If anything inflicted them all at once the toughest fellow could be excused for passing out."

"Hm." Hartnell rubbed his lean chin in puzzlement.

"That's probably why Weber didn't make any sound."

"I suppose he was sleeping with his gloves off."

"Billson would be at the microphone—and have his hands bare, too."

This was all quite understandable and plausible. When working under light pressure, the Bergmann suit's gloves can be detached—a very important adjunct for men whose duties involve delicate manual operations. Orbis's atmosphere

exerted more or less normal pressure, so that the suits served merely to retain oxygen and exclude the carbon dioxide by means of lightly gripping airlocks on the wristbands, combined with a fairly high concentration of breathable gases inside.

Incidentally, this example differentiates very well between an "atmosphere" suit and a "space" suit—two terms which are frequently confused. A space suit, as the name implies, is a stiff, highly armoured contraption used for landings on airless asteroids or for running repairs to the hulls of ships during flight. Their material must withstand internal pressures of more than twelve pounds a square inch against external vacuums, with a result that these types of suit are so awkward and heavy that I, for one, feel thankful to use them but rarely. Atmosphere suits, especially the latest Bergmann models, allow a man to move and work fairly normally for at least eighty hours in concentrations of almost any gases. One exception is fluorine gas, which eats through the material in less than two days.

So, thanks to Bergmann ingenuity, Weber and Billson had bared their hands, leaving themselves vulnerable to whatever organism had brought about their deaths.

On the far side of the clearing lay a small mound, long and low, where Billson had buried his fellow radio-engineer, marking the grave with a piece of triphenium repair sheeting on which he had scratched Weber's name and description with a power hand-drill. We laid Billson beside him, and as Hartnell, Tubby and I gazed for a few moments at the two hummocks of new, damp peat, I thought how here was yet another corner out of all the billion shimmering worlds in the firmament where spacemen rested. I wondered with a shiver whether somewhere across unmentionable voids where Inter-X duties might sometime lead us, there could be some corner of alien soil where other explorers would one day look upon my own grave.

Hartnell broke in upon these rather morbid reflections by moving away with a sigh and saying, "Well, let's get started. We'll leave Hamilton and Reddy to play with their new radio toy while we reconnoitre the forest. Probably that

little playmate's seen us arrive and now it's waiting for a chance to have another refreshing drink."

"I suppose there's little doubt that the thing is some sort of vegetable life? Usually, though, carnivorous plants merely wait for insects to come their way and seem thankful for anything they get . . ."

"These babies must be different," said Tubby, grimly. "They go out in search of a meal!"

I drew a deep breath. "I've never yet heard of a walking plant—and I won't believe there is such a thing till I actually see it."

"No telling what we might find in that unholy tangle," said Hartnell, waving a hand towards the towering walls of vegetation which enclosed us, soaring in dark menace towards the steaming sky. "Still, the job's got to be done."

Upon this philosophical note we moved once more into the jungle, speaking from time to time by radio to Hamilton, who seemed, however, far more interested in his repeater-unit than our unpleasantly difficult progress through gloomy quagmires.

On the present journey we needed not only to avoid tangled, knotted roots raising themselves from the morass, but continually to crane our necks to catch sight of anything moving among high branches.

"Proceeding at 198 degrees," I informed Hamilton.

"198 degrees," he intoned, mechanically. Then, in a more interested voice. "Why, that's towards the volcano."

"What?" said Hartnell. "Volcano?"

"Oh, yes," said Hamilton. "We saw it during the landing."

"Yes, indeed," confirmed Reddy. I might have known the echo wouldn't be far away.

"What distance?"

"About eight or ten miles."

"Does it seem active?"

"More or less. I caught sight of wisps of smoke coming from the crater."

"Nothing very alarming," Reddy assured us, "but definitely a volcano."

"Oh, yes."

This could have continued until the end of eternity. "Switching off," I said, rather brusquely. "We'll call again later."

We squelched and clambered another hundred yards or so. "These young worlds," groaned Hartnell. "Always hot, moist and volcanic. Somebody's going to find useful coal deposits here in a few hundred thousand years—but this jungle's not much use to us right now."

A sudden shower of water-drops on our right made us all halt and stare inquiringly. What could have shaken the twisted tree-tops so violently in that still, steamy air? Nothing was distinguishable among the masses of great, horrible leaves thirty or more feet above our heads.

"Probably a creeper springing loose," I said, at last. "Let's press on."

Sheer size and weight of vegetation forced us to follow the natural tunnels almost continuously, making it difficult to keep a proper record of our progress. On occasions these dripping passages became so small that we were obliged to crouch uncomfortably low; at others a great, vaulted cavern rose so high that it seemed impossible for trees to grow so tall. Most of the trunks—many of them fully twenty feet in diameter—were clothed with lumps of soggy lichen and, at points where bark had grown spongy by reason of constant moisture, had been attacked by huge, filthy-looking fungi.

Another mysterious shower of drops fell around us, hissing and spattering into the mire. We paused again, staring at one another with apprehensive surmise. Was it a natural phenomenon?

"Wish we could see something apart from these foul leaves and creepers," said Tubby. Bending his neck backwards, not looking where he trod, he suddenly stumbled over some unyielding, half-buried object.

"That'll teach you to keep your eyes on the ground," declared Hartnell, unfeelingly.

Tubby let out a flow of language which made me glad his outside transmitting microphone was switched off, otherwise the ears of young Hamilton and Reddy, back at the

repeater-unit, might have been scorched. "Nearly ripped the boot off my suit, let alone bruising my toe," he concluded, aggrievedly. "What in Sirius could it be, anyway?"

What indeed? Throughout uncounted ages, jungle trees had quietly carpeted the soil of Orbis, building up thick layer after layer with the passing of the seasons, bedding into the accumulating compost their spongy trunks when life's span ended. No branch could remain unrotted for many days in that climate; no boulder could possibly remain so near the surface.

With some difficulty we excavated a long, round stone rod, which emerged reluctantly, making loud sucking noises as it left its sticky bed. Flanges were welded to the rod at intervals of approximately two feet.

All three of us stared uneasily. It was most certainly a manufactured article. Someone had been here before us!

"The thing's broken at one end," remarked Hartnell. "The other end's got a kind of three-way jointing flange that might have been intended to fasten it somewhere."

We poked around in the stinking morass for several minutes, securing more sections of rod and a selection of transparent plates, broken into shreds.

Hartnell straightened at last with a sigh, blinking to ease eyes strained in the dim light. "Any idea what they could be, Pop?"

"I can't understand how it's possible to work stone into these shapes. The rods are made of rock all right—you can see the air-cell structure where they're fractured—yet the flanges are definitely welded."

"Who'd bother with stone when metal's so much easier?"

"What sort of rock is it?" wondered Tubby, thoughtfully. "I'm no expert, but that dark-grey stuff—look, where it's cracked, just there—reminds me somehow of pumice."

"Galloping galaxies!" exclaimed Hartnell. "Pumice—the volcano . . . !"

We had no time at that moment to speculate upon the subject, for a violent manifestation twenty or thirty feet above our heads nearly frightened me out of my suit. Powerful

flapping sounds disturbed the quietness, combined with an alarming agitation of branches which sent water cascading in all directions and momentarily blinded us with spray. A bird? Or could it be two strange creatures, encountering one another in tree-top twilight, thrashing in a death grapple?

"No animal life on Orbis, eh?" remarked young Hartnell, so casually that I felt half-infuriated, half-reassured. "I'll have something to say to Schultz when we get back."

"But what is it?" I demanded, in a choked whisper.

Once again all was silent in that steaming jungle. No sound other than the persistent water-dropping came to our ears, even though we turned up microphone-volume until the spots thudded like volleys of prehistoric cannon-balls.

"I thought it seemed to move off ahead of us," said Tubby.

"Nothing scares me like that and gets away," declared Hartnell, firmly. His lean, brown face broke into a grin and I knew enough to look out for squalls. They say ancient man grimaced and howled and gnashed his teeth to demonstrate defiance and determination; his modern counterpart, as represented by Hartnell, does none of these things—he just grins. And as for saying he was scared, it would need far more than a rustling in the tree-tops to frighten young Hartnell—or Tubby, either, for that matter. Frankly, I was the only one to be really nervous.

"I'd like to know what it was," I said.

We moved on through the steamy nightmarish jungle, leaving behind the mysterious stone rods and splinters of glasslike material. Menace of the unknown, the unbelievable, began to close in upon us, for now we knew that something lurked amid the tangled vegetation—unheard and unseen. Was it the same vampirish creature which had ended the lives of Weber and Billson so horribly? Would it perhaps swoop without warning at any second upon some member of our little party? Unconsciously, we drew as closely together as our slithering footsteps would allow.

At length Hartnell paused. "Well, Pop, how are we for direction?"

"Only a few points off, as far as I can tell."



"Is it my imagination, or have the last few hundred yards been slightly uphill?"

"I wondered, too," said Tubby. "Thought maybe I was getting tired."

Needless to voice the thought that came simultaneously to our minds. We were moving towards the outer slopes of the volcano. Surely, if we continued in the present direction we must eventually reach the smoking crater—and there these obscene masses of vegetation which now hemmed us in would be thinned by sulphurous fumes. To that extent, at least, arrival at such an intermediate destination would prove a relief.

At a point where three possible lines of progress confronted us—two large tunnels diverging from a central cavern with yet another and smaller on our right—that confused, alarming disturbance occurred again.

"Down here," snapped Hartnell, diving for the dark, low-roofed entrance. "It's moved over this way."

Following us, perhaps? We crept, almost on all fours in the filth, along a broad, shallow corridor for fully a hundred yards until at last we could stand upright again. We had diverged quite a distance from our original line of route towards the volcano, but that was now a secondary consideration. First and foremost we were determined to locate the cause of those sinister flappings and shakings among the trees.

"Well," I said, easing my aching back and staring into the branches, "it doesn't seem to be here."

"Wait," said Hartnell. "Keep quiet and wait a minute."

We paused, hearing each other's breath panting into the microphones.

The sounds came again—a scrabbling of leaves, shuddering of branches and another shower of warm, steaming spray. This time it was to our left.

Young Hartnell's hiss of understanding whistled through his teeth. "Don't you see?" The words came in a low, awed throbbing. "To the right—to the right—now to the left. The thing's guiding us somewhere. Every time it makes that confounded row there's a choice of tunnels waiting for us."

Icy prickles crept the entire length of my spine, causing flesh to goose-pimple uncomfortably. I shivered at the prospect of soon coming face to face with the unknown.

Guiding us? But where?

Doggedly we squelched on through those dreadful forest caverns. The going was so difficult at times that I found myself failing in the duty of marking our progress, and by the time Tubby expressed himself convinced that the vegetation was thinning slightly overhead, I could not pinpoint our position with the precise accuracy expected of Inter-X personnel.

I stared upwards at the loathesome green roof, seeing here and there a faintly lighter colour where radiance from thick clouds penetrated the foliage.

In any case, it was noticeable that our way led continually uphill—and three times more came the sudden rustlings and flappings from among the branches.

On the last occasion Tubby let out an almost ear-splitting yell and stabbed with a finger. "There it is! It moved in that tree!"

"What was it? What did it look like?"

"A sort of pinkish-yellow. Probably a wing or a body. I didn't notice any limbs."

Hartnell stared into the leaves for a moment, then shrugged. "If it's trying to show us the way, we'll see it again. Come on."

At length, light in reasonable quantities began to filter overhead, showing tunnels along the forest floor in all their dismal squalor. Moreover, this quickly caused the going to become more arduous, for pale shoots and writhing, creeper-like tentacles began to sprout from the morass and work their way skywards in search of stronger illumination by means of which they might nourish themselves. Soon the rotting tunnels ended and we were obliged to cut our path through tangled undergrowth.

Then, at long last, we emerged, finding ourselves approximately halfway along the volcano slope and looking to where a plume of steam lingered reluctantly around a great, ragged-

lipped crater, unable to disperse easily because of the pronounced humidity.

I'm no expert on volcanoes. All I know is that they're most prevalent on young worlds—such as Orbis—and that they erupt violently and unexpectedly in a most temperamental manner, flinging red-hot stones to an enormous height. Occasionally, I believe, floods of molten lava break through and pour down the mountainside.

I rather feared young Hartnell would insist upon exploring the crater for the sheer pleasure of staring down into acres of heaving, boiling mud and defying it to do its worst. I was right.

"We ought to investigate this, Pop," he said.

"One volcano looks very much like another, I'm told. Either inside or outside."

"Let's keep our minds on the business in hand," suggested Tubby, sensibly. "These flapping creatures in the trees that gives us showerbaths all the time."

Outside the forest, upwards to the crater, stretched bare, grey steeps of pumice, bunched into great layers, and clumps that formed almost impassable barriers. Upon these expanses nothing grew. I climbed upon a boulder, the better to gaze across the vast, depressing array of forest in some half-hope of seeing the little clearing or our ship, and promptly experienced for a second time one of the most frightening moments of my life. The entire earth throbbed and trembled faintly but ominously with the dreadful, pent-up power of the volcano.

There came to my mind a recollection of how, years ago, a friend on the staff of the Primitive Machines section at headquarters' museum had invited me to see demonstrated a quaint steam-turbine from the mid-twentieth century. At first I marvelled that an engine made from steel of mediocre quality could have survived so many years without falling to pieces. Then, as steam began to accumulate, the boiler started to throb and rumble. When I placed my hand, rather gingerly, on the insulated covering, I perceived the entire structure trembling. Obviously, the machine could not withstand such pressures. At any moment, I felt, it must dis-

integrate, tearing us to shreds in a blast of superheated vapour. What men of courage were our forefathers, trusting themselves to operate such erratic and uncontrollable affairs!

And now that I sensed once more the possibility of scorching, explosive power breaking loose—this time on Nature's titanic scale—I wished with all my heart that I had never set foot upon the horrible planet of Orbis.

We had, moreover, apparently been guided to this spot by the thing which so regularly struggled and shook in the tree-tops. For what purpose? To be present when the volcano blew up?

"Don't move!" said Tubby, in a tense, thrilling voice. He need not have whispered, for we were talking all the time over the atmosphere suits' inter-com radio and nothing was audible outside.

Hartnell and I promptly froze in our tracks. From the corner of my eye I could just see Tubby, standing gazing into the forest, his head slightly tilted. "Look there!"

"How can I look if you tell me not to move?" asked young Hartnell, not unreasonably.

"Turn gradually, then, for the sake of sweet Sirius! Don't frighten it away."

"It?"

"Yes. Over there. Sitting on a branch—staring at us!"

## CHAPTER FIVE

### CRYSTAL DWELLING OF THE ORCHIDS

Moving imperceptibly into a better field of vision, I hardly dared speculate upon what would meet my eyes.

First impression was a splash of colour—a flare of pinkish-orange rendered doubly vivid by contrast with the dull, dead, greenish monotonies of massed vegetation. Then I saw that the thing squatted like a great, multiple butterfly upon the bare tree-limb, wings folded to its sides and long, delicate feelers hanging free. Centrally situated where the wings joined was an arrangement I took to be a head—a trumpet-shaped fashioning of precisely the same gaily-hued, translucent tissue as the wings and in which sprouted objects like stamens, continually bobbing and swaying. These formed the only portions of the object's body that moved. Lying immediately beneath the wings, almost covered by them, were small, similarly shaped segments of green. Perched against a background of dark, serrated leaves and even more sombre hues of great tree-trunks, the creature possessed a weird but definite beauty, as though from the forest's wetness and decay there had sprung into bloom a gigantic flower . . .

Flower! Of course, that was why it seemed so familiar in outline! Now I recognised it as resembling in at least seven major respects a type of plant-life well described in the catalogues.

Without presuming to place it accurately, the jargon of a botanist's text-book passed before my mind's eye: Division, Angiospermæ; Sub-division, Spermaphyta; Class, monocotyledon; Order, Orchidales (most highly specialised of all the monocotyledons); Family, Orchidaceæ.

And this latter sub-classification included not only the saprophytic (feeders upon dead remains of other plants) and

parasitic species of orchid—in addition, epiphytes or “air-plants” which obtain nourishment not from the support to which their roots cling—as do the parasites—but from their long, spongy, aerial roots that absorb water from the moisture-laden atmosphere in which the plants dwell. What better breeding-ground for epiphytes than the dismal rain-forests of Orbis? But mobile epiphytes . . . ?

“You’ve spotted something, Pop.” Young Hartnell’s voice sounded accusingly in my helmet.

I turned—slowly again, that I might not frighten the bright, still image which shone against the leaves—and saw his face dark and eager with expectation.

“I—I don’t know—quite. It can’t be—a flower!”

“Why not?” He seemed surprised. “Haven’t events been hinting all along at some sort of vegetation killing Weber and Billson?”

“But it moves,” said Tubby. “This animated rainbow’s been following us all the time, making that awful row in the trees.”

“Why shouldn’t plants move?” objected Hartnell. “It took a few hundred million years before chlamydomonas started to shift themselves—but they did eventually.”

“Plants don’t suck blood.” Apparently Tubby was ready for a full-scale argument.

“Don’t they, though? Ask Pop.”

“As a matter of fact,” I said slowly, “they do—vegetable carnivores, I mean. Most of ’em I’ve come across trap insects or birds and squirt enzymes on them to decompose them so that they can absorb their juices.” It was, incidentally, not a pretty line of thought—nor, for that matter, was the fate of our two radio engineers.

Tubby continued his contentious grumbling. “I suppose this sort fly around and catch insects on the wing? Not even walk, mark you. Perhaps they don’t even grow in the ground at all. If not, how can they be plants?”

“Look here . . .” said Hartnell.

Deciding it was time to apply the closure, I said, slowly, “Hasn’t one very special question occurred to you?” My

tone gripped their attention immediately. "There are no animals on Orbis."

"That's right," agreed Tubby. "Schultz and his pet Grummett machines have my personal vindication."

"Something would have been sure to pop up in those slimy tunnels," observed Hartnell.

"This is the question, then: On a planet where no flesh-and-blood creatures exist, how do you develop a species of blood-sucking plants?"

Having quietened both bright young sparks with this question, I went on more briskly, "Our next move is to see if this object . . ." I jerked my head inside the helmet towards the motionless 'butterfly' ". . . really intended to act as a guide. We've reached the volcano, certainly—we were headed here, anyway, and we most likely travelled more quickly than we would have done alone—but where do we go from here?"

And then I was struck by an implication so enormously fantastic that I gasped aloud. For if this object had, in fact, deliberately led us through the forest, intelligence of a sort must have been exercised. Intelligent plants!

Now I like plants; all my life I've been fascinated by them and their infinite variety. They may grow among dirt, but they're far cleaner to handle than messy specimens of animal tissue that the zoologists deal with. Sometimes floral examples are so beautiful that I've sat entranced before them on the work bench, admiring their colouring and formation to the exclusion of all other considerations. But flowers were never meant to be intelligent—only lovely and idle and quiescent. On the comparatively few worlds where Inter-X had located intelligent life, it had so far been invariably an animal species; here on Orbis it seemed as though a spanner had been thrown in the works. I shuddered to think of the furore due at headquarters—and of the innumerable questionnaires I would be expected to complete.

"It's all wrong!" I said, vehemently. "There ought to be no such thing as intelligent vegetation. Plants aren't meant to have minds. It's horrible, unnatural . . . !"

I caught sight of Hartnell's grin breaking out again, and

subsided with a splutter, realising I was making a fool of myself.

"Outrages all preconceived ideas, doesn't it, Pop?" inquired Hartnell, wickedly. "Trouble is, you're hidebound and afraid that that thing in the tree's going to upset a lot of pretty botanical theories."

I waved a hand feebly. "All right," I said. "All right."

"Well," announced Tubby, "there's your peculiar orchid, Pop, and you've got the Mattus. Why not try it out?"

He referred, of course, to the Mattus thought-transferrer, of which you may have heard. As a matter of fact, this particular gadget—despite its considerable ingenuity—can be blamed for quite a lot of trouble, and the headquarters people seem unable to make up their minds about the machine. Personally, I'm wholeheartedly in support of Professor Mattus, because his apparatus is the first real step towards easy communication between assorted creatures from various worlds.

Two main methods we employ are the Erriksen vocabularies—based on a principle that all beings communicating by means of varied vocal sounds employ noises which come most naturally to their particular kind of speaking apparatus—and the Mattus. The Erriksen books, though cumbersome and complicated, have often proved useful, but this idea by no means meets every instance. Consider for a moment the utter impossibility of conveying even the simplest idea to the worm-men of Athos by means of human signs or sounds. (Their own way is a complicated system of codes formed by contact of head-segments and the thousands of microscopic hairs growing there. Even so, they have built up a flourishing and highly advanced civilisation.)

The Mattus is what might be termed a mechanical and electrical aid to telepathy. Quite naturally, adjustment must be accurate to the minutest degree, and here—although frankly, I have always found the machine to operate with particular ease and success—lies the snag. On several highly regrettable occasions mental pictures are shown to have become accidentally distorted in transmission, leading to unpleasantness of varying degrees, the worst being the war



over cobalt concessions on Zonnash. Small wonder, perhaps, that headquarters still views the Mattus with suspicion—not that I claim particular virtuosity with the gadget; I suppose I've been just lucky—yet how else is it possible to communicate easily with forms of life varying so greatly from our own?

However, strict orders are in force for immediate and detailed reports upon any failure, so that from time to time urgent radio messages crackle across the void to all ships, forbidding the machine's use until further notice. This is followed in due course by elaborate amendments to an already formidable instruction volume, whereupon the poor Mattus is reprieved. Next comes a further minor mishap and the whole procedure drearily repeats itself.

For a wonder, the apparatus was not at present in disgrace. Therefore, in accordance with Extra-Terrestrial Exploration Manual (Fourth Edition), one of the party—and with a pair like young Hartnell and Tubby you could bet it would be me!—carried the Mattus, fitted into his atmosphere suit.

Externally, the machine showed itself as a slender, telescopic rod or antenna; internally, a thin cadmium plate (it used to be molybdenum, but they changed the metal for some reason) pressed lightly upon the operator's forehead at the touch of a switch. The apparatus proper rested in a small, rectangular casing screwed to the gravity-reactor in the suit's shoulder-pack.

"It won't work, of course," I muttered. "Intelligent or not, plants don't have minds. How can they—without a nervous system?"

"This one's nervous all right," said Hartnell, cheerfully. "You could tell that by the way it scrabbled in the trees. Probably didn't like the job any more than we did."

"Go on, Pop," urged Tubby. "Shove that Mattus rod in its face and see what happens."

He referred, in this somewhat coarse phraseology, to the approved method of operation. The instruction manual recommends the extended antenna to be "placed in close proximity to the subject's brain-case" while the operator

"concentrates with full power of intellect, to the exclusion of all other thoughts, upon his expedition's peaceful intentions and the desire for cordial relationships with the subject."

Puzzle: find the brain-case, I told myself. The idea of "close proximity," naturally enough, aimed at reaching an area where thought-impulses were radiating strongly and had not become dissipated. The branch where the "butterfly" rested stretched out fully forty feet from the ground. "Proximity," I decided, rather pessimistically, would not be pronounced. Probably a good thing, too, because Mattus operation involves a psychological drawback. Suspicious subjects sometimes mistake the antenna for an offensive armament and are apt to be startled when it shoots out telescopically towards them. (Occasionally they decide to get their blow in first.) A careful operator, of course, snaps the release catch with the container directed elsewhere; nevertheless, many creatures shy when the rod approaches.

The orchid—if such it proved to be—stirred no petal as I moved gingerly across the rough pumice and stood beneath the branch on which it rested. Slowly—ininitely slowly and carefully—I raised the rod until it pointed perpendicularly. Then I switched on, not quite knowing what would happen.

Customary reaction from the subject is either fear or belligerence, shaded to greater or lesser degree by emotions such as curiosity, hatred and distrust.

"Getting anything, Pop?" asked Hartnell. Normally he knows sufficient not to interrupt concentration on the job in hand, but this time I think he guessed from my expression that something had gone wrong.

"Nothing," I said, rather curtly. "I tell you plants don't have brains—they can't think. With animals it's different. Cogito ergo sum——"

Hartnell stared. "What in Aldebaran might that mean? Something you got out of old Erriksen's book?"

"No. It's Latin—an ancient language from Earth. 'I think, therefore I am.' You'll never hear a flower saying that!"

"Don't think I'm trying to teach you your own job, Pop." This was Tubby putting in his contribution. "I seem

to remember reading of an old botanist back in the twentieth century who first proved plants reacted to heat and cold and felt the effect of drugs. Doesn't that show there's some rudimentary nervous system? Don't you believe in evolution any more?" He voiced this last question in a low, hushed tone, as though hinting at some nameless blasphemy.

"We-e-ell," I admitted, slowly and reluctantly, "there's been botanical evolution—after a fashion." I looked up to where the bright orchid still squatted motionless. "If it's true that these things managed somehow to travel through the tree-tops and to guide us . . ."

"Try again," suggested Hartnell. "If they've developed wings they can develop intelligence, too."

I tried again.

The Mattus operator is not really to be envied. Ever tried to concentrate your mind completely and utterly upon one particular wordless thought, meantime waiting for reception of unstable mental images created in depths of a completely alien consciousness? Occasionally, with difficult subjects, it helps if one closes the eyes.

I closed mine then. I waited. Nothing came, save vague, flitting, incoherent impressions born of minute electrical potentials trembling in my own brain—weird, inconsequent, useless half-glimpses at nothing in particular. Now and again I found my thoughts wandering to some definite and tangible aspect of Inter-X work, having immediately to jerk the mind back once more to concentration.

I began to sweat through sheer psychic effort. No doubt the Mattus rod had proved too short to receive thought-impulses—if, in fact, any were actually being emitted by that strange travesty of a flower.

Nonsense manifested itself once more. Again I disciplined my mind ruthlessly, eliminating all vibrations which prevented it from forming, as it were, a plain, blank screen upon which mental pictures might be projected.

There was such nonsense, for instance, as the impression of a single crystal formation. You will remember the age-old chemical trick of dissolving a substance in water until a saturated solution is obtained—"saturated" insofar as the

fluid can absorb no more of the substance. Then let a little more of the dry chemical fall into the container and, if you are lucky, delightful, fantastically shaped crystals build themselves into "castles" before your eyes. It is a demonstration that has entranced generations in the nursery, although I believe it also taught the ancient physicists that a crystal of every substance possesses its individual and unchangeable shape, thereby enabling identification of certain chemicals at sight.

I'm not sufficiently expert to recognise crystal formations—although Hartnell could undoubtedly do so without hesitation—so that the image meant little to me in that respect. It lay against a blank background in the mental picture—elongated and pentagonal, light glittering from its many flat surfaces.

I swept this vision from my mind and waited again. Now I found my endurance almost at an end. Panting and with skin a-prickle, I felt streams of sweat coursing between my shoulder-blades and although the Bergmann ventilation must have been functioning perfectly, I found the suit becoming insufferably hot and stuffy.

That confounded crystal appeared once more, shining brighter than ever and making me swear in a furious undertone.

For a second time I swept my mind blank, only to find the image return after an even shorter interval. Obviously the continued effort had become too tiring and an irrational, irrelevant brain-impulse was getting the upper hand. Moreover, my arm ached viciously from holding the Mattus rod in such an awkward position.

Then I observed a hitherto unnoticed factor which took my breath away completely. The scale and perspective were wrong. It could be no minute molecular formation of a chemical substance after all, for alongside—imprinted as clearly as in one of Tubby's best pictures—appeared a section of easily recognisable Orbis rain-forest, dwarfed by the crystal structure. At the same time I felt an inexplicable urge to examine the place more closely, while across some awful

psychic void a tiny voice whispered, "It is our home! It is Murbanya!"

We had received a message from the orchid! A call to the plant-creatures' own city, known to them as Murbanya. And in that same moment I knew a premonition of cold evil.

## CHAPTER SIX

"HELP US—OR WE SHALL PERISH!"

Feeling rather foolish and crestfallen after my dogmatic denials about the possibility of botanical intelligence, I told Hartnell and Tubby what had happened. To their eternal credit, neither gloated by word or gesture.

"A crystal?" said Hartnell. "Can't you describe it better, Pop?"

Fingering his chin in cogitation, he declared at last, "Pentagonal, with a wide base? I can't place it offhand. Nearest resemblance might be half a twin-crystal of gypsum, but that's not pentagonal. In any case, you say it's a building, not a crystal."

"I was wondering about the shape. Why pick that particular pattern?"

Tubby said, "I'm no constructional engineer, but it strikes me as a safe and easy way of building—two sides, inclining slightly inwards, with a shelving roof holding them both together."

"But it's huge, I tell you—taller than the forest."

Hartnell grinned. "Maybe the trees aren't so high in those parts. Anyway, how do we reach the place?"

In this I was baffled, but Tubby jerked a hand towards the resting orchid, and said, "That thing brought us here—let him show us the rest of the way."

From the corner of my eye I spotted something which provided a measure of satisfaction. "If not him," I said, softly, "maybe one of those other three!"

They both swung round so quickly I expected the orchids to take fright and flutter away like startled birds. However, "Pinky"—you could imagine an imperturbable devil like

young Hartnell devising such a nickname for this newly discovered wonder of the universe—remained motionless immediately overhead, except for those bobbing, weaving stamens, while his three companions merely stirred their wing-like petals. Obviously they had arrived scarcely a moment earlier and might have been settling firmly on their perches.

"Four of 'em!" gasped Tubby. "Do you think they all followed us through the forest?"

Two of the newcomers shone bright golden-yellow against the dull trees; the third showed colours of palest possible green, delicately threaded with brown. They were wonderful—and at the same time horrible. Vegetations in the forest—dark, writhing and rank—might certainly be described as frightening; nevertheless, these harmless growths sprang from soil and could not be blamed for their form or the surroundings in which they existed. These strange, bright shapes—severed from their natural element—continually struck me as evil and unnatural. Was it, I wondered, mere botanical prejudice? Or did there lie deep in my mind some intuitive, inexpressible justification for such loathings?

"Will you try again with the Mattus, Pop? Shall we push on and let 'em guide our steps aright? Or is it better for them to make the next move?"

The creatures were watching closely—of that I had no doubt, for I noticed suddenly that the central, trumpet-like arrangement between the wings of each orchid directed itself towards us from their positions in a rough semi-circle. In addition to their other abilities, then, they could see after a fashion! We have been confronted by strange forms of life on many planets, but I think at no time did I experience observation so cold, creepy and impersonal as from those tiny vegetable brains on Orbis.

"Let's press on," I muttered. "I tell you, I don't like this—not one little bit."

Hartnell guffawed. "Poor old Pop! All his neat, orderly ideas have been shoved into a heap. Never mind—just think how the big boys in your department at headquarters will be running round pulling out their grey beards in handfuls." He became serious again. "Was there anything really

threatening in that message? I mean, do they regard us as prisoners—or guests?"

"I don't know. The most I could understand was that what I thought to be a crystal was actually a giant building—of glass or some other semi-transparent material."

"Glass?"

Naturally, I could have kicked myself for not perceiving the coincidence sooner. "Those stone rods and broken pieces of transparent stuff we found in the swamp must be debris from some similar building! But how in the name of Betelgeuse did these things learn to weld stone or make glass?"

Young Hartnell's face broke into the grin that I know so well, and his eyes twinkled mischievously. "What say we go and see, eh?"

Clambering over the rough, pumice rocks with infinite difficulty despite help from our gravity-reactors, we moved along the forest fringes and across the volcano's eastern slope. From time to time I looked cautiously over my shoulder, anxious to observe the orchids' first movement to follow or direct us, but they remained perched in the trees until nearly out of sight.

"Why?" I wondered.

Tubby grunted. "Probably we're on the right track for—where is it?—Murbanya."

"Or," said Hartnell, cheerfully, "those four have done their part of the job and a lot of others we can't see are covering us from the trees."

We remained silent for a while, conserving much-needed breath. Nearer loomed the crater, thrusting its ragged, steaming muzzle towards the thick clouds through which Vega's radiance streamed. Save for that gently ascending plume of smoke, the volcano appeared quiescent. I hoped with all my heart it would stay that way. Without help from a geologist we had no means of guessing any date when there poured forth the lava that had hardened into the great blocks of damp stone over which we climbed. Certainly, it could not have been so very many years earlier, otherwise encroachment of lush vegetation must have been greater, although for that matter, with the forest floor deeply littered by debris, there



was no telling how far it had already advanced. Indeed, the broken stone rods might have formed another Murbanya built in the shadow of the volcano and long since overwhelmed by hot, sulphurous ashes belched from that selfsame crater in violent eruption.

"If you were a vegetable and wanted to build a palace," pondered Tubby, "what sort of place would meet your particular ideas of luxury?"

I thought about this for a moment or two. "Broadly, I suppose, something to let in light and keep in warmth. Just like Murbanya, in fact—though there are exceptions, you know. Some plants don't like a great deal of light."

"In other words—a plain, ordinary, horticultural hot-house on the grand scale. But how would you manufacture stone supports and glass?"

The question had already been asked, so I didn't reply. Instead, I switched on the external radio transmitter and told Hamilton and Reddy where we were headed. "Keep watch for any brightly coloured object moving in the trees near the clearing," I instructed. "You might mistake these creatures for outsize butterflies."

"How extraordinary," remarked Hamilton.

"Very bizarre," agreed Reddy.

They were at it again.

"Don't be misled by pretty colouring. These things most likely killed Weber and Billson. Is the roof fixed yet?"

"Welded tight," said Hamilton.

"Absolutely," confirmed the echo.

"We're now traversing the eastern slopes of the volcano," I went on, "and the going is fairly tough. I'll save my breath and call you again in an hour. O.K.?"

"O.K."

"Yes, indeed."

"By the way——" Hamilton embarked for once on a solo effort. "We've checked the repeater unit and it's working automatically with Fellik and the ship now. Should I switch you through to give a report to the controller?"

"Wait," I said, and shut off the microphone. "Hear that?" I asked the others. "What do you think?"

"I believe," said young Hartnell, firmly, "in having as little to do with controllers as I can possibly help. After all, they didn't tell us to report at any particular time."

"They'll be highly delighted with Pop's butterflies," said Tubby. (So the orchids were "mine," now, eh?)

"So delighted," I said, sourly, being old and fairly wise in the ways of those in authority, "that they'll most likely order us to stay here six months for a full-scale investigation!"

"Altair preserve us!" exclaimed Hartnell, hurriedly. "Not if I know it!"

Those unfamiliar with Inter-X procedure should not rush to accuse us of shirking duty. Admittedly, our job is collecting data—but on lines fairly well defined, in that we merely prod superficially on any strange planet, so that higher executives may decide for themselves which particular specialist squads need to be sent later for a protracted stay. Suppose, for various reasons best known to themselves, the controllers decided no botanical expedition could be spared? I've known them before to earmark an odd specialist who happened to be on hand and detail him to produce a report single-handed to the best of his ability. If they grabbed me for the Orbis investigation I might not see Hartnell and Tubby for years—if ever—and although these two young devils can be exasperating at times, I think, after all our adventures together and our deep bond of comradeship, I'd hand in my resignation rather than be parted from them. So if such evil fate was to be mine, I decided to postpone it as long as possible.

Hartnell had stopped and was staring back over the way we had come. "They've gone!"

"Who? The orchids?"

Even from this considerable distance we would have been able to catch sight of the three bright objects had they still occupied their leafy perches, but nothing was visible save dark, looming forest.

"We'd hardly miss Pinky," admitted Tubby.

"Let him scatter raindrops on someone else," I said. "I

don't seem able to contemplate these objects with the same affection that you do."

"Just an unsympathetic old botanist," said Hartnell, and grinned again.

Our way round the mountain grew gradually less craggy, until at last we approached a slope where the rocks had weathered themselves into comparative smoothness and occasional pockets of fine volcanic dust appeared.

In accordance with regulations, Hartnell led our little party, I came immediately behind and Tubby—whose progress was not so easy because of absorption with his cameras—last. This section of the Inter-X manual laying down that the photographer constitute the final member of the party always struck me as rather macabre. The idea, of course, is that should anything untoward happen unexpectedly to the leading explorers, headquarters possesses a camera record of the occurrence. Now and again something ambushes the photographer from behind, but the trail-breakers are supposed to guard against this.

Then Hartnell halted abruptly, motioning backwards with his hands in gestures of caution. From where he stood, his eyes covered a downward slope above the brow of the ridge and little could have been visible from the other side save the top of his helmet.

"Come up beside me slowly—and take a look at this."

Moving as silently as possible, I peeped over.

Less than fifty yards away, squatting directly in our path on the bare rock, was an exceptionally large orchid of pale yellow, with stout, olive-green underwings and its long, trailing "feelers" spread about like spider-legs. The petals must have been fully five feet long and nearly two feet broad, with the trumpet-like head about the size of a portable visor-screen. Beside it rested a crude, brown, oval-shaped container. With measured, deliberate clawing motions of its roots the thing was scooping volcanic dust into the vessel.

I drew a deep, shuddering breath of absolute disbelief.

Then the creature spotted us, grabbed the container and tried to scuttle away. Before it made many yards, however, the gourd fell from its grasp and rolled, bumping over and

over, from one block of pumice to another. I experienced a sense of shock as it moved, for having observed Pinky and his friends in the tree-tops I half-expected it to fly. Instead, the thing used several of its roots as legs to dash for the safety of the forest.

And when it had disappeared, leaving our eyes free to observe other things, we saw the corner of a great, white, shining building peeping over the trees, while upon the volcano's farther slopes other constructions had been erected, the purpose of which was a mystery.

"Murbanya!" said Hartnell. "We're there!"

He strode over the low ridge and down the slope to investigate that strange container.

"Careful!" I said. "Mind how you touch it!"

Perhaps I am ultra-cautious; perhaps I possess inherent dislike of dark corners and mysterious hiding places. But prodding unknown articles on alien planets is frequently fraught with peril.

Picking up the gourd with infinite gentleness, he poured its contents slowly upon the ground. The vessel held nothing except fine volcanic powder.

"Dust!" exclaimed Tubby, disgustedly. "Now what in Andromeda would they want with that?"

So we left the gourd discarded upon the ground—no doubt its rightful owner returned later to retrieve the ruthlessly scattered treasure—and returned our attention to Murbanya.

Save for our footsteps stumbling along the hard causeway, no sound broke the stillness until rustling began again in tree-tops on our right.

"There they are," announced Hartnell, softly.

"I don't see 'em yet," said Tubby.

Nevertheless, we all knew that the orchids—"mobile epiphytes" is still the correct term, but somewhat of a mouthful—watched us unseen and matched our progress towards their palace. First to emerge, when we were still more than half a mile from the building, was none other than Hartnell's old acquaintance, Pinky. That in itself was remarkable, for

while we had travelled comparatively quickly despite the rocky terrain, the orchids' route must have led them arduously from branch to branch through the forest. We saw soon afterwards how dexterously—if that's the right word for anything without hands—they swung themselves lightly via creeper, vine and branch at a surprising speed. In anticipating that they flew, we had been misled by their strong resemblance to butterflies. "Wings" were actually petals far too fragile to beat the air sufficiently to achieve flight, but those strong, prehensile roots, composed of far tougher tissue, formed a quite different proposition.

Again I felt ashamed of my rather impulsive denials that vegetable species could not possibly acquire powers of locomotion—although I still failed to understand how an epiphyte might derive sufficient food from the air to permit such violent exercise. After all, energy and matter of any kind are interchangeable and indestructible, so that every calorie used in traversing tree-tops or gathering gourdfuls of dust must necessarily be replaced by a corresponding quantity of food-substance. In this I found myself face to face with one of the universe's irrefutable laws, and wondered how the orchids managed.

The end section of Murbanya rose in huge angles a colossal height above our heads. We had little doubt that the vast, semi-transparent expanses between supporting girders derived from some variety of glass. "A crude combination of silica, calcium and potash," pronounced Hartnell. "Neatly fitted against the stone girders, though."

"But the place is empty," said Tubby, puzzled. "I thought you said Pinky and his friends lived here."

We peered curiously through the blurred, uneven windows, seeing no movement or colour inside. I cast a glance over my shoulder to where our glittering escort remained motionless on near-by trees. Between the palace and the forest all growth more than a few inches high had been eradicated, clearing a path fully fifty yards wide.

"Maybe we'd better not go inside yet," I suggested. "Perhaps they're rather touchy about strangers." I struggled with personal objections for a moment, then made what I

regarded as a considerable gesture. "I'll try the Mattus again," I said, bravely.

Pinky remained steadfast as I approached, holding the extended rod as near as possible to the branch where he rested.

I switched on, concentrating all my mental energy upon one word, "Murbanya?"

I waited for what seemed an incredibly long time and had begun to sweat again before that tiny, almost imperceptible psychic projection bridged the gap between animal and vegetable kingdoms. "Yes."

"He says it's Murbanya," I told the others.

"We knew that," said Hartnell, with more than a touch of impatience. "What else?"

His remark, needless to say, typifies the impatience of youth in an age when scientific wonders are regarded as matters of course. While I was still marvelling at the mere fact of having established contact, here was young Hartnell registering a complaint that communication was less clear and easy than conversation over a tea-table.

Next, then, I faced the task of requesting, by means of wordless thought, permission for us to enter the palace.

It would prove unbearably tedious, though, were I to recount the many failures, misunderstandings and complete blanks which accompanied each attempt at thought-exchange. Suffice it to say, without going into painful details, that we were not only invited to see the wonders of Murbanya—but actually urged to do so.

"Our people need help," said Pinky. (His real name, so far as I could understand, was something like "Topracht," and this I will call him in future instead of Hartnell's absurd nickname.) "Our species is in peril. Help us—or we shall perish!" The stamens bobbed and swayed agitatedly.

"In peril? How?"

"It is not my prerogative to place the details before you. I am merely a messenger, sent to guide you here. Our leader, Hankola, seeks consultation on the matter."

Determining these meagre but fateful facts occupied nearly half an hour, during which time Hartnell and Tubby

waited with commendable patience, keeping silent and merely trying to guess what was happening by reading varying expressions on my features.

Whether we might assist or not remained to be seen; at least we had been civilly received and granted entrance into the Palace of the Orchids. Despite this, however, and the fact that we had been hailed as possible deliverers, I could not repress a shudder at the sight of Topracht's powerful, rippling roots pulling their way over a carpet of green moss which by contrast made his petals appear of almost blood-red hue. Overhead towered the tremendous, angular construction of the palace, its glass concentrating radiations from the hot, steamy skies, although the material was so irregularly cast and of such poor quality that we could see nothing of the outside world. Thanks to our insulated suits we experienced no additional discomfort from heightened temperature, though my instrument panel registered 142 degrees, compared with 127 in open air. Humidity, though not so heavy as in the rain-forest, registered sufficient to counteract almost any evaporation.

"Phew!" said Hartnell. "They like it warm, don't they?"

"True to type," I said. "If there's one thing this kind of orchid can't stand it's a cold draught. Absolutely and almost instantly fatal."

The palace floor had been levelled but not entirely smoothed, and as I watched with morbid fascination how the orchid's propelling roots gripped moss and earth, I imagined it must have been left in this condition deliberately in order to facilitate "footholds." The moss—undoubtedly cultivated as a soft, luxurious floor-covering by orchid standards—made our own step comfortably light and springy after the rough going of those volcanic slopes and the soggy mire of forest tunnels.

"They don't seem to bother much about furniture in these glass caverns," remarked Tubby. "There's nothing but the moss and the walls."

"What sort of furniture would they want, anyhow?" demanded Hartnell, practical as ever.

Believe it or not, they wrangled and speculated upon this subject with what I considered undue levity, until at length Topracht paused before one of the many walls or bulkheads which divided Murbanya's length into convenient sections. His multi-coloured colleagues, escorting us in the rear, did likewise. Passage through the walls was achieved by glass panels sliding in crudely fashioned grooves, and when no move was made to open the one we now confronted, I got busy again with the Mattus.

"Here is the ante-room to the Council Chamber of Hankola. Beyond this wall stand guards who allow none to pass save with proper escort. Wait—and I will seek audience."

"If they were a bit cleverer at glass-making," remarked Hartnell, "we might have got a preliminary peep at the Super-Orchid. As it is . . ."

"Personally," I said, casting yet another glance into the immensely high roof, "I hope they've been clever enough at constructional engineering. One of these panes falling loose would cut a man in half."

Tubby wrinkled his nose. "What happy little thoughts you have, Pop."

Back came Topracht with news that we would be graciously allowed to enter the ante-room. Not until we passed inside and set eyes upon two gigantic, flame-red orchids guarding the succeeding door did it strike me that each petal-colour might bear some particular significance. Yet we learned while waiting that such was indeed the case. Flame-red of the guards denoted warning; Topracht's own pink tones represented a messenger's badge, easily distinguishable at a distance to those who waited for important tidings. Bright golden-yellow orchids specialised in knowledge concerning other species of vegetation, while the pale-green and brown individual, whom we had also noticed with the original party, was a cross-country navigator. The pale yellow object we had seen busy with the gourd carried out duties which, so far as I could ascertain, were described as "gleaning."

Moreover, the orchid colours, far from being purely decorative, denoted certain status in the social scale. As an



example, shades of red enabled recognition on sight of palace officials—the flame-hued guards and our pinkish messenger friend, for instance—ranging according to their predestined duties through puce, maroon, vermilion, orange, rose, crimson and scarlet.

The sight which confronted us when we straightened up after ducking our heads to negotiate the final doorway was nothing short of breathtaking. Ranged in serried ranks across the green floor of a great, glass-covered hall rested thousands upon thousands of these animated flowers, grouped according to precedence and colour in curving tiers outrivalling the most brilliant rainbows. Yet this startlingly beautiful assembly struck me at the same time as horrible and uncanny, for upon our entrance every trumpet-like head moved silently to inspect our little group and the bobbing stamens fell motionless. We were under the silent scrutiny of a host of vegetable eyes.

“Blazing Betelgeuse!” said Hartnell. (You will have noticed how, in moments of stress, he invariably falls back on alliterative ejaculation.)

Tubby said nothing. He was busy ensuring that his colour-film faithfully recorded this fantastic scene.

“This is all very well,” I muttered, straining my eyes to detect system and order—apart from colour segregation—in that huge gathering, “but where’s Hankola?”

Then, in response to some mute order from Topracht, a section of orchids immediately in front of us moved smartly aside and we saw him!

## CHAPTER SEVEN

### THE EXECUTIONERS ARE ALWAYS WHITE

We have seen great wonders on many worlds, yet in the instant that we laid eyes on the King of the Orchids I perceived a coincidence so remarkable that I felt an icy, throbbing hand laid on my heart. For Hankola's abnormally large petals and head were a magnificent, blazing purple—a colour associated back on Earth for thousands of years with royal prerogative!

He rested not upon a throne—there had been that previous, rather futile discussion concerning lack of furniture and ornamentation in Murbanya, you remember—but alone in a circular space where the green moss grew noticeably thicker and softer. In front stood a row of councillors—rich, dark browns with decorative bands and spots denoting their particular sphere of activity—and behind him a squad of the big, flame-coloured guards.

"Purple," I murmured again.

Hartnell would have none of it. "Seven major hues," he said. "Odds are only six to one that the boss had this particular colour picked for him."

"We'll see," I said, grimly. "If you ask me, we're going to meet a super-vegetable."

Time for argument was lacking. Topracht moved along the opening which had been formed in the crowd and waggled stamens briefly with a councillor whose pink spots placed him as Head of the Messengers or some similar office. Then they both crawled in a manner which—unless it were sheer imagination—struck me as definitely subservient to within three feet of Hankola, where both said their piece.

In a moment, Topracht was back beside us—stretching out a long, writhing root to seize my wrist and urge me

forward. Looking at the thing clamped powerfully round my arm, I felt sick and dizzy with apprehension and understanding, for not until this close-quarter contact had I noticed how the epiphyte's trailing roots bore hundreds of immensely strong, hair-like fibres hunched at their tips. I fully expected to know the shocking agony of innumerable sucking needles plunged deep into my blood-vessels.

"Look!" I said, faintly. "Look!" Half-paralysed by fear, I could utter no other word.

"Then these things did get Billson," said Tubby, in a grating voice. "Weber, too."

Small wonder poor Billson had gasped over the ether that agonised, urgent cry to "get a botanist!" I wondered about his reactions in the moment when, reporting Weber's death, he had suddenly observed an orchid heave itself into the repeater housing and place a death-grip on his hands. Now we fully realised how he had tried, while merely half-understanding what was happening, to provide a suitable clue for those who came after. If he'd only managed to mention the colour . . .

Topracht, his purpose achieved, released my wrist, leaving me limp and trembling. As we walked nearer to Hankola I saw the councillors move aside and the alert, flame-coloured guards close in upon their ruler. Frankly, I didn't feel equal to the task, but duty was duty and I raised the Mattus rod once more—hoping Topracht had explained its purpose—and switched on.

This time I experienced no groping in a blank void—a sensation akin to listening over a dead line on one of those old-style telephones. Rather was the impression similar to faint, hissing static in a radio receiver—a hum of telepathic "atmospherics" generated by those thousands of tiny vegetable brains in the background. There was, as always in strange contacts, an over-riding emanation of curiosity, with other subdued emotions jostling vainly for position.

Once again, for purposes of the narrative, we might as well gloss over those painful, halting minutes while I strove to secure clear impressions. Let us, rather, go ahead as though everything worked simply and straightforwardly.

"Here," said Topracht, "is Hankola, our leader. Wise and far-seeing in the interests of his people, he seeks your aid to solve the vital problem that confronts us."

The purple orchid waited expectantly. When I held the Mattus rod as near as I dared to the crinkled, delicate tissue forming his head, the stamens wobbled a little in agitation at first but we soon settled down to business. His opening question proved routine. "Whence come you?"

I'd anticipated this and already decided not to complicate matters unduly. "From beyond your planet."

"You and your companions are not like other men. Why have you only four thick, ugly roots?" Presumably he meant our arms and legs. "Do the colours of your flesh indicate your technical callings?" In this, of course, he referred to our atmosphere suits. Evidently I couldn't escape some sort of explanation.

"Our world and our life are very different from Orbis, O Hankola." I groped for similes. "Creatures such as we carry sap with us in our own bodies; we have no need to absorb nourishment from the soil or from the air with root-fibres."

I sensed astonishment—but in a different manner from what I'd expected.

"So is it with us. Do we not move around in civilised fashion, unlike the savages of the forest, who must remain in one place all their lives?"

I could have kicked myself with vexation. The analogy had been entirely foolish. Blood or sap? What did it matter, once mobility had been achieved? The "savages of the forest," presumably, were the normal, ordinary vegetable growths.

Hankola seemed more interested in the food question, however. "How, then, do you maintain and strengthen your bodies? Can this be done without mineral salts from the soil? Without nitrogen, phosphates and potash?"

They knew their chemistry, then, to some extent. And when Hankola mentioned these familiar substances I felt thankful again that I was on familiar ground and facing no weird, fantastic scheme of plant-life based on strange funda-

mentals. Orbis, like other satellites of Vega, possessed an oxygen atmosphere, although in spite of the terrific vegetation "positively stinking with carbon dioxide," as Hartnell put it. Consequently, it shouldn't have been surprising to find the chemistry of photo-synthesis and chlorophyll repeating itself on the planet—naturally, with more or less the same varieties of chemicals needed to sustain its products.

"Our bodies are not constructed to absorb substances directly," I explained. "On our world vegetation—savage vegetation," I added, hurriedly, to avoid awkward misunderstandings, "is consumed by other creatures, which in turn are consumed by us and parts of whose bodies we employ for different purposes. Also, we tear down vegetation of some varieties to help build our palaces." I didn't feel equal to providing any more detailed definition of timber.

Hankola's purple petals trembled with horror, and via the Mattus plate I experienced a wave of revulsion so strong that nausea almost overcame me.

The receiver went blank in the same instant that Hankola's stamens commenced to quiver and agitate themselves violently, explaining to the assembled multitude the enormity of our existence. Background static swept in strongly with an impression of dreadful loathing. It may have been imagination again, but I could have sworn that the councillors nearest us recoiled slightly.

Young Hartnell, watching my features through the helmet face-plate, signalled simultaneously with eyebrows and intercom. "What's happened, Pop? Doesn't he like us?"

"No more than I like him, apparently—purple or no purple. The orchids consider us unnatural because we eat!"

"Tell 'em we've got to live!"

It would be unfair, I think, to blame subsequent events upon this specimen of Hartnell repartee, but at the time, little realising where it would lead, I accepted his advice and found myself actually embarking upon a justification for the continued existence of homo sapiens.

"On many worlds exist many ways of life," I began, "each seemingly strange to the others. When . . ."

"Of such things I know nothing," said Hankola, flatly.

"On your dreadful planet, you say, creatures actually devour each other?"

Well, I thought, he might as well know the worst and get it over. "We utilise those which serve our purpose best, at whatever stage of the chain of existence they may be." The terms meant little to him, of course, but I instanced an example. "Grasses grow from the soil; insects live upon the grasses; fowls consume the insects; Man uses the fowls for food. In addition, tiny plants grow upon a river-bed; water-snails eat the plants; fishes feed on the water-snails; crocodiles consume the fishes; Man kills the crocodile and uses its skin to make boxes in which he may carry articles."

"A parasitic world!" exclaimed Hankola, newly appalled. "A place where all creatures live in fear of violent extinction! We feel for you both shame and pity!" A peculiarly intelligent question came next to his mind—a justification for my premonition concerning his aristocratic colouring. "And who preys upon Man?"

"None," I said, bitterly and without thinking. "Man preys only upon himself."

He couldn't understand this rather cynical remark, for which I was thankful. "Everything needed to sustain you comes from the soil itself," he went on, thoughtfully, "yet it must undergo certain processes first." I detected strange, telepathic undercurrents, as though he were groping vainly for a particular idea. Why this strange interest in food, I wondered. Could it be merely morbid fascination with our way of life?

"You say, in justification for your foul habits, that you must live," he continued. "We of Orbis also wish to live, yet a time is rapidly approaching when our civilisation, all for which we have worked and strived . . ." were he possessed of human arms I swear he would have waved them in theatrical gestures round his crude, hideous palace ". . . may perish and the people relapse into savagery."

I waited for enlightenment.

"Through generations Zembola has provided for our needs. Now he begins to fail us, and food grows short."

Zembola? Who might he be? Something the orchids

worshipped, no doubt. An idol? Having had previous unpleasant experience with such matters, I hoped we weren't due to entangle ourselves with any primitive and passionate religion.

And what did Hankola mean by saying their food supplies were failing when the crust of an entire planet remained at their disposal? Admittedly the area was occupied at present by forest, but trees had been cleared to let light reach their awful palace so I couldn't see any reason why they shouldn't bare other stretches of land for what Hartnell later described as "orchid restaurants."

"Zembola," explained Hankola, "is our mighty volcano—unique on Orbis! There is no other."

Now came understanding, bright and clear! I knew, too, why we had surprised the golden-yellow "gleaner" scraping lava dust into his gourd. Phosphatic ash from the volcano slopes formed their chief source of food. During quiescent years lava deposits had failed to increase and most of them had been consumed.

I took time out to acquaint Hartnell and Tubby of the position, whereupon the latter burst into querulous protest. "What about those big boulders of pumice we had to climb over to get here? Can't they eat those?"

Apparently they couldn't—for two reasons: (1) before proving assimilable for orchid roots the lava needed to be "weathered" a long time; (2) in any case they had no means of grinding the rock to suitably fine powder.

Hartnell grinned in a pleased fashion. "Now we can do our good deed for the day. Headquarters can ship inorganic fertilisers by the ton! Here's a chance for us to be hailed as saviours of the side instead of having crowds of weird creatures after our blood . . ." He broke off. "Sorry! Wish I hadn't said that."

"Do you think we ought to mention the matter to Hankola?" I asked. "Or would it merely put ideas into his head—about us?"

"Can you tell whether he was genuinely horrified about feeding on other animals and plants, or if he was only putting on an act?"

"I believe he was sincere."

"Once let 'em know that dried blood's about thirty per cent solid nitrogen," said Tubby, cautiously, "and there's no telling what may happen."

"Oh, I don't know," I said. "After all, I didn't gather they were actually starving yet."

"One of 'em was hungry enough to go after Billson," said Hartnell, grimly. "Anyway, Pop, we leave it to your excellent discretion."

Which was very complimentary but hardly comforting.

I decided to take a chance. Raising the Mattus rod again, I said, "Know, O Hankola, that other worlds possess vast resources of all nourishments which your people require. As a gesture of goodwill among nations, our councillors will provide plentifully for all your needs."

A vast stir and rustle sighed eagerly through the glass-covered cavern as the big purple orchid heaved himself upon tough, trailing roots and translated. Apparently Hartnell had been correct in his forecast. All strange idiosyncracies of race and species forgotten, we three "parasites" soared to high favour with the throng.

"As a reward for this favour," announced Hankola, magnificently, "you shall be shown the wonders of Orbis civilisation and the mechanical marvels our scientists have devised for its maintenance. While you behold these miracles, think well how your generosity will preserve them, for otherwise our people might still exist in savagery—held with their roots in one place, utilising every minute of the day searching the soil for grains of nourishment and consequently having no time in which to produce great cultural and scientific schemes."

I told him it would be a treat in store, but before being delighted and impressed in this manner we had another matter to discuss. Rubbing in well his own remarks about parasitism, I described the fate of Weber and Billson, requesting his views upon such behaviour, asking whether such a thing as punishment was recognised on Orbis and what action he proposed to take.

The orchid had to think about this for a moment.



"Punishment is certainly part of our system. Malcontents exist among all societies, refusing to obey laws which have been made for their own benefit. Our most frequent problem concerns an individual who refuses to act honourably and in accordance with his colouring. Occasionally we have, for instance, green orchids who insist upon acting as scientists instead of navigators, or yellow orchids demanding to carry out higher duties than gleaning. How can society be maintained in proper, orderly fashion if such exceptions be made? Therefore those who persist in rebellion and subversiveness are punished. For this purpose we have executioners."

He turned slightly and the row of flame-red guards behind him moved aside to reveal two white, spidery orchids lurking balefully in the background. I swear to this day that it was not illusion. The whole appearance and attitude of these creatures depicted cruelty and brutality of a hideous degree, with their thick, unwholesome white "wings" and their immensely strong, knotted roots.

"Wherever you move throughout Orbis," said Hankola, "you may easily recognise their kind. Executioners are always white."

The guards returned to their stations, shutting out those pale orchids from my shuddering gaze.

Hankola went on: "And now I have made my decision." (Why he bothered to keep the squad of councillors, I don't know, for their advice never seemed either offered or requested.) "The individual who attacked your fellow-creatures shall be detected and punished—not because you apparently desire this as a revenge or because you have promised us food. He shall pay for the crime of parasitism, which is anathema to all right-thinking men."

A back-handed compliment, if you like! But then, because of their habits, saprophytes and parasites are "outlaws" of the plant-world on many globes.

And another thought struck me. Had we any right at all to raise the matter? What means did the orchids possess of ensuring true justice was done?

"Look here," I said to the others, rather uncomfortably, "Hankola's promised to find the thing that killed Weber and

Billson, but I'm not sure where we stand with headquarters in the matter. It might have been an accident, you know."

Accident clauses in the Inter-X manual of instruction provide many a headache. Most easily comprehensible instructions are contained in passages concerning "Communication with Extra-Terrestrial Beings (Intelligent) Parts I, II and III":—

"No previously unknown extra-terrestrial creature shall be deemed hostile until such hostility is established beyond all possible doubt. . . . Nor shall any action by unknown extra-terrestrial creatures leading to the deaths of not more than two expedition personnel be counted hostile, since such action may well be occasioned by accident or ignorance. . . ."

Not more than two. . . . Our two were Weber and Billson. Suppose, after all, their deaths had been due to ignorance and that I had been the means of condemning some unfortunate orchid to undeserved punishment? Ethical issues of the matter disturbed me greatly.

Hartnell, naturally, viewed the matter more light-heartedly. "Personally, I've no sympathy with the one that got them. In any case, Pop, it's been condemned by its own ruler according to its own laws. Didn't you say Hank explained that?"

"Who?"

"Hank—Hankola." He was busy with nicknames again.

"Yes. But it doesn't make me any happier."

I turned again to the orchid leader. "If you find the culprit, what punishment will he receive?"

"The highest punishment, of course," replied Hankola, in surprise. "What other is there?" (Justice on Orbis, apparently, knew no particularly fine degrees.) "He will be brought here before the assembly in Murbanya and the executioners will ceremonially pluck him to pieces!"

## CHAPTER EIGHT

### MOBRANO, THE MISCHIEF-MAKER

Topracht had been appointed our guide for the escorted tour of scientific wonders, and we set out from Murbanya in an atmosphere created for only the most honoured guests. Leaving by the end opposite to that by which we had entered, we climbed the volcanic slopes to those constructions we had noticed earlier from a distance.

The mechanical marvels of Orbis were both curious and quaint. Hartnell and Tubby didn't hesitate to express profound disappointment, because apparently my sarcastic inflexion when repeating Hankola's words had been insufficiently pronounced.

Yet this handiwork of plants, crude as it was, ranked in my mind as little short of fantastic. Almost entire effort had been devoted to making the volcano work for them—in itself no small achievement—and little time spent adapting the resources of the forest.

"Our activities," said Topracht, by way of explanation, "are now concentrated upon providing food. To this end all persons on Orbis labour. Further building—except for necessary repairs to the palace—is suspended; all exploration has ceased."

Many reclamation enclosures, where lava dust matured under action of the elements, were empty; in some of the refining mills merely a handful of orange-and-green speckled orchids packed gourds with prepared chemicals. Organisation was present to some extent, arranging different sections for phosphates, potash, sulphur and magnesium.

"The nitrogen," I said, in surprise. "Surely that is important? Or can you absorb it from the air?"

"In primitive times we did so. Now we must take it

through our roots at prescribed times. So long have we been accustomed to doing thus that we have lost the power possessed by our ancestors."

"But how. . . ?"

He directed attention to one of the series of buildings quite near the palace. "Nitrogen is plentiful and our warehouses are full. But we cannot live on nitrogen alone. Inside the mountain lies a great subterranean lake of water and ammonia. The building you see there is a pumping station, busy raising these substances by night and by day, and other machinery separates the ammonia and converts it into nitrogen. Come, we will view it."

So our first sight of an Orbis mechanical plant—as opposed to the vegetable variety, to quote another piece of Hartnell's foolery—provided glimpses of complicated tangles of pipes, filters and containers, housed in the inevitable construction of stone girders and thick glass slabs.

"Pumping station?" queried Hartnell. "Where do they get their power?"

Topracht didn't shine on technical subjects.

"I don't think it's pumping machinery as we know it," I said. "More likely the water's under pressure and forces itself here."

Tubby nodded. "Ingenious, no doubt, for a glorified cabbage to construct, but it falls a long way short of old Hank's boastings."

"Well, he seemed pleased enough with it," I said. "No reason why we should break his heart."

"He oughtn't to go shooting off his mouth in that bombastic way, then," complained Hartnell.

"Never mind. You know what these puffed-up, tin-pot dictators are. Animal or vegetable, the breed's the same."

Now we were headed for the volcano's higher slopes, where activity became more marked. Quite a number of orchids in assorted colourings busied themselves with mysterious journeyings, and I observed one of a hue not previously noticed—blue, with brown edges to the wings.

"He is one of the scientists and engineers," explained Topracht. "Soon we shall witness the marvels of their work."

The terrain sloped steeply, while over us the great, irregularly shaped crater loomed, appalling in size because of its nearness. The orchids hauled themselves upwards with no apparent effort, but before long we were obliged once more to seek the aid of the gravity-reactors.

Now we were climbing the last few yards to the crater's rim. Outside the additional heat must have been noticeable, to say nothing of sulphurous fumes.

"You would wish to gaze into the holy depths?" inquired Topracht, doubtfully.

Had I been right? Did they indeed worship the volcano?

"If there's no objection."

"It is your privilege."

We peeped over the final barrier. Fully two miles across, there extended a great sea of dark-grey, smoking slag which now and again heaved itself angrily to reveal fissures first of red, then yellow, then white-hot rock close beneath its unpleasant crust. Each time those internal fires broke through a puff of grey smoke fought its way upwards against the damp, down-pressing air—swirls of vapour rising every few yards all over the crater until merging themselves finally into that ever-present plume. It was a terrible, menacing and unforgettable spectacle.

"Did somebody say this thing was quiescent?" demanded Hartnell, briskly. "Here's an active volcano, all right—or I've never seen one. Why, that lava's molten only a few feet down. Can't you imagine a great, fiery tube of that stuff extending right down into the core of Orbis? Wonder it hasn't broken out in fumeroles before now."

"You trying to cheer us up?" demanded Tubby.

"What's a fumerole?" I said.

"A sort of subsidiary crater. Lava breaks through at any point on the mountainside where the rock strata happen to be weak."

Half a mile to our right orchids were working with some primitive lifting apparatus constructed either of poles or the ubiquitous stone girders.

"Seen enough here?" I asked. "Let's find out what they're doing."

"I've seen enough, anyway," declared Tubby, fervently. "Great Cassiopeia! Look at that!"

"That" was a particularly vicious heave from crater depths which threw hundreds of tons of molten lava many feet into the air. The tremendous crashing as they fell back produced a sustained roar that drowned the hissing and murmuring of those continuously opening fissures. From somewhere down below the mountain emitted an answering rumble.

"Come on," I said, hastily.

Topracht inquired about our reactions. "Most impressive," I said, hoping not to seem too off-hand.

"I, too, have gazed upon Zembola occasionally," he confided, "but the poisonous vapours do not make it wise for Orbis people to approach too closely."

"Beyond these rocks are people working. How can they survive?"

Believe it or not, the working site proved a place where stone girders and glass were manufactured. Presumably by trial and error the orchids had discovered in their forests a variety of large gourd which seemed almost unaffected by high temperatures. These gourds, heavily weighted, were lowered by means of the crane we had seen into the depths of the volcano. Hauled up full of white-hot, molten lava, they were emptied into channels of suitable size hewn from a level platform of rock and from which, when solidified, the girders were prised.

Glass was made somewhat similarly by filling the gourds with fusible material, lowering them into the crater until the stuff became liquid and then pouring it into flat, shallow depressions.

"Warm job they've got here," said Tubby.

I asked again: "How do these workers survive?"

An obvious shrug preluded Topracht's reply. "Few of them live long, I believe. But they make their sacrifice bravely for the glory of Murbanya."

Hartnell's comment was both typical and crisp. "I'll bet they do!"

I received the impression that our guide was glad to change the subject. "Come," he said, "you must meet our chief scientist, Mobrano. He is more competent than I to explain the wonders of his domain."

On the way we passed an enclosure outside which clustered many hundreds of vari-coloured orchids, waiting patiently to file a few at a time through a doorway where entrance was controlled by two of the flame-red guards.

"It is their eating time," explained Topracht. "In these unhappy days, when food must be conserved, every individual is allotted a feeding place, to which he must report at the appointed time. But come, you shall see inside."

Orchids fluttered by the dozen round each of ten arrangements that I can only describe as feeding troughs—shallow depressions in the ground, about five feet long and two feet wide—rigidly controlled by more of the easily distinguishable guards.

The troughs, I learned, contained a mixture of chemicals, nitrogen-water and dead moss—this last presumably debris from the palace floors. Each orchid was allowed to place two roots—not more—into this unspeakable porridge, resembling the sludge through which we had waded in rain-forest caverns, for about two minutes. How the guards timed the "meal" I could not detect, but upon a signal the diners withdrew from the tank and went away, leaving places vacant for the next batch.

Discipline, on the whole, was good. Only twice did I perceive trouble—some ravenous creature trying to eat out of turn—and each time a guard's long, trailing root cracked like a whip round the culprit.

"Hard lines on the slow eaters," said Tubby.

"The hungrier you are, the faster you gobble it up," observed Hartnell. "Maybe that's how they even out requirements."

We found Mobrano in a large glass hut nearly half a mile away. He was a blue-petalled orchid of impressive appearance but the Mattus rod—a most delicate detector of

sincerity—revealed a personality to which I was by no means attracted. Certainly, he was polite and helpful in explaining technical and chemical processes, yet sinister undercurrents occasionally swirled to the surface. One explanation could have been professional envy when confronted by creatures obviously far more advanced scientifically—or perhaps he feared we might supplant him in Hankola's favour and lose him his job by our gifts of food.

We had not been with the scientist more than twenty minutes when a messenger entered. He so closely resembled Topracht that for a moment, until I glanced round and saw our earlier acquaintance standing beside Hartnell, I thought him to be the same.

"By the command of Hankola," began this pink newcomer grandly. "Has Mobrano discussed his new scheme with the wise strangers?"

The answer, I thought, came rather dryly. "Mobrano has not done so."

"Then it is Hankola's command that all proceed forthwith to the palace, where the council will hear the statement."

"What's all this about?" demanded Hartnell.

"Apparently Mobrano's been hatching some plan or other and the chief wants to hear our views."

It was a pity that the orchids lacked facial expression, otherwise we might have learned in advance whether Mobrano felt pleased or aggrieved by newest developments. As it was, we had perforce to restrain our curiosity until we stood once more within the green semi-circle before Hankola and heard what was afoot.

Mobrano took the floor and the assembly—still present in their thousands, so what they'd been doing during our absence I couldn't guess—settled down to listen. So far as I was able, now that the Mattus seemed to be operating more smoothly, I provided a running commentary for the others.

"O mighty Hankola and members of the Council," began the scientist. "Permit me to speak in public, for the benefit of all men, the plan I have devised to preserve the people of Orbis from starvation. Our race has multiplied



and waxed fat upon Zembola's generous provision; now that is almost exhausted and we face the prospect of reversion to primitive modes of life unless deliverance is forthcoming.

"You will know that the life-giving rock brought forth earlier by Zembola is almost gone. Tests of lava from the upper crater reveal it to be almost totally lacking in nutritive substances, but I have good reason to believe that in the white-hot lower crater are present many of the valuable chemicals our nation so sorely needs.

"Now I am a scientist. . . ." How proudly and importantly he said this. ". . . I am a scientist, and I have observed the behaviour of materials. Should a small spot of water remain in the moulds from which glass or girders are cast, I have seen many times how the red-hot rock leaps and spurts into the air as the moisture vaporises beneath it. Many other scientists and workers who have observed the phenomenon will also tell you that this is true.

"Therefore, thinking with my scientific brain on how I may assist my beloved chief and his people, there has come to my mind a plan whereby Zembola shall be encouraged to surrender life-giving substances for our use."

I shared the almost unbearable suspense with which the assembly hung upon his words, lacking only their eagerness.

"I ask myself," said Mobrano, "whether the red-hot rock at the bottom of Zembola's crater will not also leap and spurt if water be introduced. The answer is: Yes! It must do so, for that is the nature of things and I, Mobrano, have observed it.

"Also I have studied the strata of rocks leading from the surface to the lake from which we obtain our nitrogen. There is a certain place of weakness where, with the aid of diggers, we could cause the rocks to fall, enabling the lake to gush forth against the red-hot stone deep under the ground. And when that happens shall we not once more find awaiting us sufficient food-material to maintain our glorious nation for generations?"

They say scientists have mad ideas! I followed Mobrano's bumptious and over-weening arguments with ever-increasing horror, fully aware of what cataclysmic holocaust

would burst upon Orbis were this hare-brained plan ever put into operation.

"Galloping galaxies!" ejaculated Hartnell. "An artificial eruption."

"I only hope," said Tubby, more phlegmatically, "that I'm able to photograph it from a long way off—the farther the better!"

"We've got to stop him," I said. "Can't you realise how this crowd will grab at the idea of easy living again?"

Now Hankola was demanding our opinion. "You have heard Mobrano's scheme, O strangers. Is it not good?" He turned to members of the Council. "Observe these visitors again. See how they bear instruments they have fashioned. Remember how our messengers discovered their palaces in the forest beyond Zembola. True, their civilisation is not equal to our own. . . ." Here I expected him to laugh heartily at such an absurd suggestion. " . . . but we will listen to their views and see if in any way they are able to improve or modify Mobrano's excellent suggestion." Back to us again. "You spoke of travelling from another world. . . ." His roots expressively waved away involved and far-fetched side-issues. "Of that I know nothing, but if you speak truly in this respect does this other world possess volcanoes—counterparts of Zembola?"

"Indeed, O Hankola!" I thought of telling him they were much fiercer and larger, but decided not to enrage him over trifles. "We, too, have studied their behaviour and know the mighty forces pent up inside their craters. Frankly, we fear them, for when they begin to belch red-hot stones and smoke and ashes none knows how many people will be killed or how many miles of countryside devastated. What need for this risk on Orbis when our headquarters will despatch food in plenty?"

He didn't like the scheme being thus deflated, nor did Mobrano. "How soon may this food arrive?"

"I'll have to call the controller," I told Hartnell. "Hope Hamilton wasn't mistaken when he said they'd got the repeater unit working."

The "heavenly twins" were still at their posts. "Put me through to the ship," I ordered.

"Yes, sir," said Hamilton.

"Right away," said Reddy.

"Everything satisfactory at your end?"

"Couldn't be better," said Hamilton.

"Made ourselves very comfortable," admitted Reddy.

("Trust them," muttered Hartnell. "Wish we could say the same.")

At last the controller's voice sounded in my helmet, coming loud and clear from *Old Growler* far out across the system.

"Recorder, please," I said.

Fully a minute elapsed before I heard the crisp acknowledgment of "Recorder on." I realised from this time-gap how Orbis and the ship were receding one from the other. Travelling at the speed of light, those radio waves had occupied more than half a minute to traverse the void between us—a trip of roughly six million miles.

In formal language beloved of headquarters for reports, I outlined the position, requesting confirmation of steps I had taken in promising help to the orchids and begging for an immediate decision. Every word, of course, after my initial announcement, was being permanently recorded, while at the same time the controller listened in.

When I had finished and given the "Report ends, recorder off" sign, he said "Vegetable intelligence, eh?" I'd predicted our discoveries on Orbis would cause a stir. Apparently they had, for controllers are usually cold, precise and impersonal, hearing the most hair-raising stories and making critical decisions without turning an eyebrow. This controller actually verged upon being matey, but I was too old a hand to trade upon it.

Next order from the ship was "Wait!"

Now I knew the record was being played back for benefit of scientific big-shots who inhabited private offices in the upper portions of the ship where we lesser mortals never ventured. I knew, too, that Inter-X organisation even now

had the supply sections busy calculating shipment details in case the answer proved favourable—as I knew it would.

Four minutes only were necessary for a decision. "We can provide four and a half tons highly concentrated material, delivered Orbis in ten weeks," said the controller. "Full shipment up to 800 tons by special freight vessel from depot on Zenna II six months later. Notify immediately whether these figures are acceptable."

I knew they had done their best. Out here, in such unexplored parts of space, transport is non-existent except for *Old Growler*. Most likely they planned to scrape up the four and a half tons from Fellik and bring it to Orbis by the Inter-X ship as immediate relief. Meantime, a freighter would take off immediately from Zenna II across the long, weary wastes of space, carrying a load sufficient to make the orchids independent for years.

Most likely, controllers had other problems, too, which prevented their doing more. *Old Growler's* brood lay scattered throughout the system, performing its various individual duties. The prescribed schedule must not be too greatly upset, or while we were saving an orchid "civilisation" our own men might die marooned on distant planets before the ship reached them again.

I relayed the answer to Hankola. "Four and a half tons in ten weeks—inexhaustible supplies six months afterwards."

He conferred briefly with Mabrano and another orchid whom he addressed as "Councillor of Supplies."

"We must decline the offer—it is not sufficient," said Hankola at last. "We need at least twenty tons to last us six months."

"Four and a half is better than none."

"It merely postpones the evil day when starvation overtakes us."

"Could not your people live temporarily from the soil itself until our help arrives?"

For a moment I thought he had been too disgusted even to consider this suggestion, but then I learned he was placing it before the assembly.

I gathered they couldn't make up their minds. Many

older councillors regarded Mobrano's scheme as a despicable ruse which the volcano would rightly resent; others appeared rather pleased at the prospect of a long "holiday," rustivating and digging their roots into some quiet spot. Yet Hankola obviously favoured the scientist's plan and many found it impolitic to be too outspoken in their opposition.

"After any relapse into savagery," said one worthy, leaving no doubt about whose side he was on, "our people may not favour an active life again."

"True, true." Hankola signalled solemn agreement. "If we adopt neither of these suggestions, is there a third?"

Vegetable brain or not, I began to entertain grudging admiration at the fact that Thought manifested itself here. And I felt pleased again at this further vindication of my "royal purple" theory.

All the rows of elaborate, vivid colour rested motionless, stamens no longer twisting and bobbing in strange patterns of communication.

First to break the silence was Topracht. He moved slightly into a more prominent position before Hankola to begin "Revered ruler, in times of so grave a world peril there is undoubtedly a third course—one which is loathsome and disgusting to our way of thinking and at present against the laws of your realm."

He paused. I drew a deep breath, guessing what was to come.

"Behold these strange creatures now among us. They have described ways of life on their world—how skins of animals are converted into carrying-bags. Do we of Orbis not employ gourds from the 'animals' of our planet—the forest vines—to serve our purposes? Observe the strangers' understanding of our machinery, their knowledge of our food substances and how the rocks beneath Zembola are laid open to their gaze. They, in their need, have overcome the problem of remaining alive. May not we, in this crisis, do likewise?"

No less than I'd expected, there swelled to the high, shiny roof of the palace a dull, ominous muttering of anathema and revulsion.

"Forward the executioners!" said Hartnell, in a low voice.

But the big purple orchid spoke to some effect. "Hold!" He crept closer to me, his stamens within a few inches of the Mattus rod. "Tell me, O stranger, if your people had not learned to devour the juices of other animals, what would have happened?"

The answer provided no particular difficulty. "Our species would have died out many thousands of years ago. In fact, there would have been no life related to our kind upon the earth—only primitive plants." (I thought it better to include the adjective, otherwise he might have taken offence.)

Hankola stood for a moment gazing at me in speculation. Then he spoke to the concourse. "Hear, all men! I—Hankola—have reached a verdict. In our hour of need we shall sacrifice lesser breeds of the forest to our salvation."

A great sigh soared to the heights. Whether they liked it or not, the decision had been taken for them.

"This lot," said Hartnell, "are the aristocrats of Orbis. Wonder if they take a turn at the feeding troughs with the proletariat out there. If they do, they might not be so choosy about what they eat!"

Confused impressions crowding in upon the Mattus drove me nearly crazy. A babbling hubbub of discussion had broken out among the councillors, each of whom was frantically signalling his opinions to all and sundry, while Mobrano dodged here and there, presumably trying to enlist belated support for his pet idea.

Hankola soon put an end to all this. "Topracht shall be commended for his counsel and promoted from Grade III to Grade II. Steps shall be taken forthwith in clearing the forests, with all labourers drafted to haul foliage to the mills, where it shall be crushed and the nourishing juices added to our people's daily ration at the feeding centres. . . ." I seemed to sense his shuddering. ". . . for we will not tolerate any such beastly practices as sinking our roots into living flesh."

I chipped in with what I considered a worth-while warning. "A word of caution, O Hankola. Upon our world are

creatures or plants containing poison in their bodies, and of which none dare eat. Might not similar growths exist on Orbis?"

The entire assembly grew silent and motionless at this far-from-cheerful thought, whereupon Mobrano grabbed the opportunity for a little vengeful gloating.

"See to what plight the strangers and the traitor, Topracht, have brought your councils, O Hankola! Were it not wiser to listen to me—Mobrano, your trusted Chief Scientist? Who knows but what these interlopers have full intention of eliminating your people? Who shall say which juices are poisonous and which harmless until they have been tasted and digested?"

"But," protested somebody, "the strangers are those who have voiced a warning in this matter."

"No doubt hoping," replied Mobrano, with a sneer, "that their devilish advice would be sought and they might deceive us into placing poisons unwittingly in our people's food."

I could understand Mobrano's eagerness to crack back at us, but he'd overstepped the mark.

"In government lies a responsibility," declared Hankola. "Therefore a representative assembly comprising the council and selected Grade II citizens shall meet here in four hours' time to taste samples of plant-juices collected from the forest by the Chief Scientist's staff. The tasting assembly shall also include myself—and the Chief Scientist!"

With that he heaved himself into a walking position and strode out, escorted on either side by a line of the flame-red guards.

I explained to the others what had happened.

"The cunning old so-and-sol" declared Hartnell, grinning delightedly.

## CHAPTER NINE

"NOW HEARKEN TO THE VOICE OF ZEMBOLA!"

We sat alone in a corner of the glass palace outside the Hall of Council, resting ourselves upon the tough, springy moss and leaning aching backs against the walls. Long periods of concentration with the Mattus machine seemed to have drained me of strength, coming close upon the exertion of that climb across volcanic slopes to Murbanya.

Tubby rewound and reloaded his automatic cameras. "You know, Pop," he said, with a pleased smile, "it's been a treat photographing those things out there with the new chromatic emulsions. I'll bet headquarter's analysis staff go colour-blind before they get through."

Hartnell proved freshest of the three—hardly surprising since he had done little or no work in the last several hours. "How about another little trip of exploration—this time without the escorted tour arrangements. Topracht's a very worthy orchid, no doubt—and one not afraid of revolutionary ideas—but his presence is a bit cramping."

I shook my head. "Count me out. I'm an old man and I've just had some very disturbing emotional experiences. Besides, unless we had someone in authority with us they might grab hold of queer specimens like us and call in those horrible-looking executioners."

"Besides," said Tubby, backing me up, "we want to be on hand to see how the new food-experiment goes. Wonder how they'll enjoy puree of tree-bark and essence of toadstool? Did you see the neat little lava bowls they're setting out next door?"

Hartnell wrinkled his nose. "If there's one thing I don't like people to talk about . . ."



The sentence remained unfinished. A dull, grumbling roar—felt by vibrations through the ground rather than heard—ran trembling deep under the earth.

“What in Sirius was that?”

For a second we stared at one another in wild surmise. The explanation dawned simultaneously. It was the volcano.

“Nothing to bother about, I suppose,” said young Hartnell, airily. “Bound to have an occasional tremor, being so near the crater.”

I’ve explained my own reactions previously. “Look here,” I said, “I don’t like it. . . .” I glanced to the heavy glass roof, a good couple of hundred feet above our heads. “A few heavy, red-hot stones crashing through that. . . .”

“Poor old Zembola protesting at a spot of indigestion, no doubt.”

Tubby gave a fat chuckle. “Not so much as those orchids’ll protest after their tasting session.”

Almost out of temper, I said, “Can’t you two grinning idiots realise what’s happened? Mobrano’s so peeved about his pet theories being thrown out that he’s started the eruption!”

That sobered them—good and quick!

“Come on!” snapped Hartnell, setting off at a run. “We might manage to save the day.”

How he thought that three of us, with our bare hands, could prevent a volcano from spitting out rocks and molten lava I don’t know, but nevertheless we followed him, panting up the mountainside.

Zembola’s ragged heights presented their customary placid appearance, with the ever-present plume of smoke no larger and no more angry than when we first sighted the crater.

A quick glance inside the pumping station showed everything to be normal there and another twenty minutes’ fast walk, aided by the gravity-reactors, brought us in sight of the point where we knew the subterranean lake lay closest to the surface. Activity here was pronounced. Swarms of orchids, petals of so many differing shades and combinations of colour that trade-identification proved almost impossible,

scurried in and out and around a sizable tunnel-mouth in the hillside. Only one presented no difficulty in recognition—the bright blue of Mobrano, busily directing operations.

"What did I tell you?" I gasped. "The fool!"

"Very nice spot of character-reading, Pop," admitted Hartnell, dryly.

"Well, let's stop him."

Again I could have sworn that the earth trembled, but orchids busied themselves unperturbed and Zembola continued to smoke serenely.

Thrusting myself through the throng towards Mobrano, Hartnell and Tubby at my heels, I shoved the Mattus rod into the scientist's "face" and projected every ounce of pent-up anger and apprehension I could summon. "See now the cost of ignorant meddling with forces beyond your control. Zembola grows already, demanding vengeance for this indignity you have inflicted upon him. And what of Hankola? Will he lightly regard defiance of his rulings?"

The answer contained a mixture of defiance, triumph and scorn. "O Things from other worlds, who know not Orbis. Even at this moment, half the waters of the lake flow into the volcano's bowels. Crawl back to your masters and tell them of Mobrano's wonders—how he compelled Zembola to surrender treasures from his fiery stronghold. As for my master, Hankola—will he not praise his Chief Scientist, who has saved our people from all the degradation of parasitism?" He moved away in a manner so marked that I felt definitely snubbed.

I shrugged helplessly. "He's done it!" I told the others. "What now?"

Before any constructive suggestion could be made, another manifestation caught our attention—this time no deep, angry rumbling but a sound of hissing and rushing approaching rapidly from somewhere nearby. Then from the tunnel-mouth spouted a huge fountain of boiling water, preceded by gushes of almost invisible steam which fired themselves as from a cannon and collected in vast, white clouds fully two hundred feet high. With a great deal of prodigious gurgling, the place spat and roared like a geyser.

Some of the spurts flung out bodies, scalded into limp, light-brown, fibrous rags, belonging to orchids which had been working underground.

And again came that low, ominous rumbling.

"Not having any other ideas," said Hartnell, "let's put the humanitarian services of Inter-X into operation—run back to the palace and warn 'em."

I looked helplessly for a moment at the gently steaming crater.

"If she's going to blow," said Tubby, profoundly, "she's going to blow. And we can't do a thing to stop her."

"Come on, then. I hope they won't object to the juice-tasting ceremony being interrupted."

Half-anticipating difficulty from the flame-red watchdogs, we were surprised to find the door leading into the Hall of Council totally unguarded. I slid aside the glass panel—and stood momentarily petrified gazing at the spectacle that confronted us, Hartnell and Tubby goggling over my shoulder.

Three rows of crude, heavy bowls chipped from solid lava blocks were arranged neatly in the centre of the hall. Around them danced fully a dozen orchids, jostling and shoving to dip their roots into the strange liquids, darting restlessly from one to the other and lashing out mercilessly at any who dared impede their quest.

Hankola was capering with a couple of dark-brown councillors in the far corner. Two guards—presumably those who should have been on duty at the outer doors, but none seemed to question their absence—flailed at one another with their trailing roots, making noises like whips cracking. Fifty feet up the wall rested a golden-brown specimen, feelers stretched almost taut between the girders he was negotiating, apparently urged on from below by another of his kind. Even as we gazed the climber fell, bouncing on the moss. Apparently he was unhurt, for both of them promptly ran unsteadily to the nearest bowl and began sucking in more juice.

"They're drunk!" said Hartnell. "To borrow an archaic phrase from Earth—absolutely stinko!"

One pale-green orchid and another orange-speckled creature, locked in a wrestling embrace, rolled over and over among the waving roots and stone bowls, taking no notice when they became shoved impatiently to one side. A deep-blue individual—evidently driven by intoxication from customary scientific placidity—tried to cram all his roots at once into a bowl of pale yellow juice, failed and rolled helplessly across the hall until he hit the wall.

"Reminds you of a quiet night in a Z-bar, doesn't it?" asked Tubby.

Z-bars are where bright young spacemen enjoy binges between trips, and certainly no places for respectable, middle-aged botanists.

"I wouldn't know," I said, coldly.

Then I caught sight of Topracht. He had curled pink petals round himself and rested in a corner, presumably taking no interest in the proceedings.

Hartnell looked at me and winked. "Hangover, do you think?"

"We'll soon find out," I said, and walked across to him, switching on the Mattus as I went.

The general impressions collected by the rod were completely indescribable. I'd found it sufficiently difficult to follow the workings of vegetable brains in circumstances of sobriety; now that inhibitions were loosed by unaccustomed inbibings the thought-impulses conceived images totally beyond comprehension.

Topracht did not move as we approached, and no mental acknowledgment of our presence reached me.

"Asleep," I announced.

"More likely 'passed out,' as they used to say."

Tubby presented us with a minor problem. "What's the polite and gentlemanly way of waking up a sleeping orchid?"

I said I didn't intend to trouble about trifles like that in the present crisis. What about the volcano getting ready to burst loose, and hadn't we better get hold of Hankola.

"I wish you the joy of the job," said Hartnell. "He's only bothering with one thing at the moment."

Watching "Hank's" queer, unfiring gyrations in company with his two companions, I was forced to agree. However, Topracht solved the question by promptly waking and allowing one or two of his limp stamens to quiver inquiringly.

"What happens here?" I asked.

"It is the juices. They are poisoned. I have laid myself here to die. Some bowls are filled with the Sap of Madness, but no man knows which."

"How many have died?"

A sensation of utter despair and remorse made itself felt—a desolation so great and so hopeless that I felt like sobbing in sympathy. "None yet—though death must surely come. It is a punishment which they share—but only I deserve."

In that moment I knew the mental burden he bore—though somehow the anticipated revulsion failed to materialise. Topracht realised his guilt and was prepared to pay the penalty. He it was who had killed Weber and Billson!

We should, of course, have guessed before. Landing of the radio engineers' ship had not passed unnoticed. A messenger, together with a navigator and two orchids skilled in forest ways, had been despatched to the scene. Topracht, investigating, had come upon Weber asleep in his bunk.

"Often, in the quiet places of the forest," he sobbed, "I and my friends have secretly tasted the juices of other plants and found many of them good. Also have I seen them, as now, sip the liquid which drives them into madness and death."

"When I entered your strange little palace I tasted—and found that good, too. And next day I tasted once more, when the other moved round near the strange, glowing machine. Does he, too, sleep for ever, like the first one, not moving again?"

I nodded solemnly, thinking of those two little mounds across the clearing and the triphenium tags marking the identities of the men buried there. "Yes, Topracht," I said, "they both sleep for ever."

Misery poured in great waves through the Mattus. "When we drank of living trees in the forest they suffered no harm. Why should creatures of other worlds be different?"

I didn't know the answer. There wasn't a great deal more I could say. With parasitism prohibited under cruel penalties—what the law might be in future I didn't dare guess—Topracht had taken a frightful risk in making his revolutionary suggestion to Hankola. They might easily have suspected that he had already been enjoying delights in the forest.

"Summon the executioners!" said Topracht. "Let me pay for the error I have committed."

"Executioners? Here?" Then I saw them—their thick, loathsome, dead-white petals eerily visible from the dark corner where they lurked. "We can talk of that later. For the present we need your aid to secure Hankola's attention. Tell him that Mobrano has proceeded unauthorised with his plan to provoke Zembola—and the volcano will soon become uncontrollable."

Topracht paused in disbelief—a mood quickly shattered by thunderous explosions booming from the mountain-top and setting the glass panels vibrating in their sockets. A great, rosy glow shone simultaneously outside, followed by dark clouds of smoke hurtling skywards. The ground seemed to shudder and sway beneath my feet.

The orchids paid no attention, continuing their romp. (It hadn't struck me until this moment that their hearing was rudimentary, if it existed at all, and the thick moss must have deadened the shock reaching their roots through the earth.)

Our messenger hovered delicately near Hankola and his drinking companions, hardly daring to intrude upon the orgy.

At length I observed his stamens agitate themselves violently, being answered by similar bobbing and weaving in the trumpet-heads of the other three, which then focused momentarily upon us before switching to that part of the glass walls through which Zembola's eruption was visible.

Hilarious triumph spattered quickly among the drunken throng, penetrating even the climbers' befuddled brains, whereupon Hankola lurched towards us in staggering little runs. "See, O Things from the Outer Darkness, how your futile science pales before the great knowledge of Orbis. Mobrano has succeeded. Now hearken to the voice of Zem-bola. Even upon the volcano Mobrano has imposed his will." His attitude, no longer judicious, had become mean and gloating. "You tried to prevent this achievement. You wished our people to die of starvation or lapse into savagery, while you pretended to summon help."

He overwhelmed my outraged protestations of good faith with a tide of antagonism, beginning to sweat himself into a fury.

"I do not believe your help would ever have arrived. How wise were we to reject it." I sensed him to be thinking, nastily. "Now let us consider what punishment is fitting for creatures such as you, whose deception has been unmasked."

He swung his great, purple body round the room, demanding by means of lashing stamens to receive attention from the cheering, swaying throng. Surprisingly, force of his personality penetrated those fuddled minds and secured him a hearing. "How shall we inflict our vengeance upon those creatures, O councillors? All present shall think well. A draught from the refreshing yellow bowl for him who gives the best answer."

Judging by the enthusiastic reaction, this liquid must have been most potent and pleasing to the taste.

The winning reply—voiced by an executioner, of all people—shook me. It was that the assembly adjourn to witness the marvellous manifestations of Zembola, afterwards returning to the palace for a victory banquet consisting of more forest juices, culminating in everyone present being allowed to taste—ourselves!

"Join us for dessert," murmured Hartnell, and grinned.

The sight of his lean, brown, delighted features were precisely the tonic I needed in that appalling moment. The worse our predicament, always wider grew his smile. But

I didn't understand how we were going to extricate ourselves from this little lot.

"We will not deprive the strangers of seeing Mobrano's marvels," cackled Hankola, evilly. "They shall accompany us."

When we left the palace this time, stepping into the open, where our view was no longer obstructed by blurred, irregular glass, the landscape had become transformed. Huge, menacing volumes of black smoke now poured from the crater, lit occasionally on the underside by bursts of flame searing upwards from the molten lava. Dim rumblings sounded almost continuously, and from time to time the earth shook in agony. From deep beneath the surface I sensed a horrible grinding of great, loosened rocks.

"What wonders have Hankola and Mobrana wrought," murmured Topracht, standing beside me near the pumping station. "But where is the gift of lava they promised?" Was this the first, faint whisper of treason?

"Don't worry," I said, grimly. "It will come."

Next moment Orbis received the first instalment. A dazzling orange column spouted terrifyingly into the hovering smoke-cloud, shooting great quantities of boulders and ash high above the crater, while over the ragged lip poured a fuming wave of angry lava which quickly transformed itself—on the surface, at least—into a steaming, irregular black mass that crept crumbling down the mountainside.

There was no movement among the assembled, multi-coloured crowds, but I sensed via the Mattus a collective sigh of awed satisfaction.

Light from thick clouds veiling the sky of Orbis, filtered through layers of volcanic ash, turned a deep, menacing yellow and reflected from vari-hued petals of orchid bodies like a nightmare kaleidoscope. Over everything brooded a deep sense of depression and impending cataclysm.

Faster and faster surged floods from the crater, building themselves into a fifty-foot wall of advancing lava; higher and higher shot the violent eruptions of hot stones and ash; louder and louder growled the subterranean conflict of fire and water.



"Only fools would stand here and wait while the stuff reaches us," said Hartnell. "How about making a break for it?"

I saw what he meant. Greater peril than the lava wall, however, came from great stones which started to crash near us. Tinkle of broken glass sounded through the uproar of eruption as one fell through a warehouse roof.

Hurriedly we scanned the strategic possibilities. Close by stood Hankola's guards, hemming us against the rows of councillors whose social standing had ensured them a front seat at the show.

"If we could reach the pumping house—" said Hartnell, thoughtfully.

A most violent earth tremor nearly flung us off our feet. Even the orchids were becoming worried, especially when they saw hundreds of others streaming across the lower slopes in search of safety.

"The pumping house? But that's not safe. Only needs a couple of boulders through the roof and anybody inside would be sliced to ribbons!"

All constructions within half a mile of the crater had now disappeared beneath that horrible, smoking, black sea of lava. Personally, I wasn't so much worried about the eruption as the 'quakes. A slight shift of already weakened strata might at any time precipitate the remainder of that subterranean lake into the crater's lower slopes. If that happened, a considerable portion of Orbis would vanish in a conflagration beside which Zembola's present and indignant blasting resembled a night-light.

"I'll call Hamilton and Reddy," I suggested. "They'd better get away."

Hartnell nodded absently, still thinking about something. I switched on. "Can you see the eruption?"

"Yes. The smoke's drifting this way," radioed Hamilton back.

"Yes, indeed. Very spectacular." I thought one wouldn't be able to answer without the other. "Everything's going quite dark."

I cocked an eye skywards. The immense black pall of

smoke and suspended ash now entirely blotted out the sky in our vicinity. A sniff at my helmet test-valve showed that the air stank of sulphur.

"You said Billson's peeper was in order?"

"We checked everything."

"Absolutely."

"Then switch this channel through to the ship, leave the repeater unit open and take off immediately."

Indistinctly, I heard them muttering together.

"But what about you?" asked Hamilton. "Where are you?"

"Yes," came Reddy's inevitable voice. "Where are you?"

"Don't bother about that. On your way while you're still safe. This volcano's going to blow up any minute!"

Neither seemed particularly impressed. "We could come and fetch you . . ." said Hamilton.

" . . . in the land-roller," concluded Reddy. (This is a light vehicle used for miscellaneous surface transport.)

"Through these forests? Look here, you two, I can't spare time for arguing. Get that peeper airborne immediately. We'll follow in the other as soon as we can. That's an order!"

"Yes, sir," muttered Hamilton.

"Very well," growled a rebellious Reddy.

Fine, hot ash now began to settle upon us from the skies, mingling with sulphurous rain into a detestable kind of mud. This, coupled with intensified bombardment of stones, caused the orchids to find their position particularly uncomfortable. Nevertheless, they didn't intend to relax their vigilance and, surrounded by the councillors' party, we were hustled back several hundred yards nearer the palace.

By this time blasts from Zembola's crater had grown to appalling proportions and the vast smoke-cloud brought premature night upon the planet, lit fitfully by great explosive flashes. Again and again from beneath our feet came that dreadful sound of titanic pressures grinding ancient rocks to powder. Steam spurted threateningly from fissures splitting the ground uncomfortably near where we stood.

"Controller here! Controller here! Are you calling?"

Current occurrences had caused me to forget temporarily my last instructions to Hamilton and Reddy. Briefly, I summed up events since our last report and the predicament in which we now found ourselves.

"Maintain contact. Good luck!"

Hartnell grinned again, his features scarcely visible in the horrible gloom. "Who says controllers aren't human?"

A moment later the voice from the ship sounded again. "Ensure expedition photographer obtains complete record of the eruptions. Second party will attempt to recover pictures on ship's return voyage."

Tubby emitted a wordless ejaculation of disgust. "Who says so? Why—I do."

"Well," said young Hartnell, "are we going to wait calmly for their celebration blood-sucking, or do we make a break for it?"

For a moment or two a silver speck, tipped with pink, shone in the eastern sky, then was gone. Hamilton and Reddy had taken off, back to the safety of *Old Growler* and our friends. I was glad Hartnell and Tubby hadn't seen them go, otherwise they might have shared the desperate loneliness and nostalgia that afflicted me. I thought of the parent ship, circling in space waiting for her laggard offspring. And when the peeper eventually nestled under her wing she would speed off once more upon her appointed voyage of exploration, leaving us alone and forsaken—in peril of our lives—upon an alien planet.

"What can we lose?" asked Tubby. "Only question is which direction we run—and when."

## CHAPTER TEN

### TERROR STALKS AGAIN IN THE FOREST

"They're getting worried about these showers of stones," said Hartnell.

This was definite understatement. Here and there along the slopes we could see crushed and twisted remains of the flower-like creatures—some lying still, others writhing feebly. So far we had no means of learning exactly how heavy a blow those colourful, delicate-looking petals could withstand.

"Not so worried as I am," said Tubby.

Some of the councillors began to run around in helpless little circles. "Save our precious Hankola!" they cried. "Revered one, you must move back to the safety of Murbanya. Zembola's gifts, welcome as they are, overwhelm us!"

"What generosity!" said Hartnell, sardonically. He nudged me, meaningly. "Look, they're going to be busy getting Hank under cover. I'd say we'd do best to head for the forest."

Alarm pulsed powerfully through the Mattus. Soon, I hoped, it might develop into definite panic, giving the orchids something else to think about than wreaking vengeance upon three Inter-X men.

A half-ton chunk of stone shrieked down in a giant, smoking parabola and landed not twenty yards away, sizzling and steaming where it dug deeply into damp earth. Nearby orchids flung their feelers into the air in alarm and there was a concerted rush to Hankola's side.

"This is it!" yelled Hartnell. "Come on!"

We snapped the gravity-reactor controls half-over—full power would have robbed our feet of sufficient purchase to make a smart getaway—and bounded through the half-light towards where the huge wall of dark trees loomed barely visible beyond the palace. Glass crashed and tinkled in a

continuous treble motif to the massive bass of Zembola's thunder.

"Not too close to the buildings," I warned. "If the stuff flies in splinters and cuts our suits . . ."

Every few seconds the scene became illuminated by a ghastly, flickering glare, reflected from rolling billows of black smoke in the sky.

"Can you see if they're following us?" gasped Tubby.

Some of the orchids, notably the stalwart guards, were indeed waving roots by way of signals and turning their trumpet-heads in our direction.

Huge glass panes of Murbanya shone dully in that dreadful light, making the vast building's outlines visible against the trees and the dull, yellow horizon.

We bounded hopefully round a corner, knowing that only fifty-odd yards lay between us and the shelter of forest caverns.

"I never thought," puffed Tubby, "that I'd actually be glad to find myself back in that awful sludge."

Then the three of us skidded simultaneously to a halt, for running alongside Murbanya, heading in our direction, came squad after squad of the red guards. Whether they actually sought us or were hurrying to restore order I don't know, but it was no time for hesitation. Lacking opportunity to reach the jungle in this particular region, we swung round and raced back. And there, moving towards us with slow, definite menace, crawled the two white executioners.

"Jump!" yelled Hartnell. "Jump over their heads!"

"No!" I almost screamed. "We'd never get high enough! They'd claw us down. . . ."

My cry of agonised warning came too late. I saw young Hartnell, without stopping in headlong flight, launch himself right into the air. Long, trailing roots—those fibres strong enough and tough enough to crack like whip-lashes—snaked upwards.

The reason why they missed is beyond me, but this much is certain—had we all been airborne at the time, one of us at least could not have helped being brought into the grip of those pale, sinister shapes.

In the diversion created by Hartnell's manoeuvre, Tubby and I managed to dash past them, hearts in our mouths. Scurrying in panic, a herd of assorted orchids ran around and between us, causing wild dodging to avoid unpleasant collisions.

The whole earth now shook and heaved continuously, sometimes almost throwing us from our feet. A parcel of ashes suddenly poured down as though from some enormous chute suspended in the sky, covering an area as big as a space-deck with red-hot dust. By the time we had skirted this patch of blinding fumes, Hartnell was nowhere to be seen.

"Which way did you go?" I demanded, urgently. "Where are you?"

"I'm heading for the pumping station. . . ."

"In the name of Aldebaran, why?"

He chuckled. "Just got an idea, Pop."

"Look here," I said, "this is no time for any of your humorous ideas. Let's all get into the trees, where those damned awful white orchids won't find us."

"Well," he said, calmly as though explaining why he couldn't pay a minor social call, "as a matter of fact I ran the wrong way after I'd jumped over 'em just now. They've got me surrounded with a squad of the red guards—and the pumping station's the only place I can reach."

What could we do? One thing was certain in view of latest developments—Hankola had sent out the order for our elimination. Otherwise why were the flame-red guards operating so methodically? And why were they accompanied by those pale, bloated executioners?

"This is dreadful," I said.

"Best thing you can do, Pop, is to head back to the ship with Tubby."

What did the young fool take us for? The Inter-X book has a lot to say concerning difficult positions in which expedition personnel may find themselves—a lot of stuff that reads with cold, persuasive common sense but proves absolute babble when put to the test with normal human beings. "The expedition's duty," it says, "is to obtain valuable data

required for furthering the sum of knowledge. Heroism is a noble idea, yet numerous instances are on record where lives have been vainly thrown away and precious information lost in attempts at rescue. At all times interests of the expedition as a whole and the duty of returning with data must receive precedence, without thought for personnel as individuals."

"Numerous instances. . . ." So long as men remained men and resisted efforts to turn them into soulless recording machines, the "instances" would multiply.

"Remember what it says in the Inter-X book, Pop," came young Hartnell's voice. (He's always chaffing me about being a stickler for regulations.)

"You telepathic or something?" I asked. "I was just thinking about that. . . ."

"Get Tubby back to the ship. The controller wants those pictures of Zembola."

"Not till we have you safe," I told him, firmly.

"Think what it says in the book. . . ."

I committed something perilously near to blasphemy. "Curse the book!" I said. "Are you still all right?"

"I'm in the pumping house. I slammed the door shut on a guard's feeler and I think he's rather sorry for himself. The machines are still working, so far as I can judge, although there's a couple of holes in the roof where stones have come through."

Zembola bellowed once more, emitting a thunderous orange flame. By its light I saw in the distance a great number of orchids milling round the pumping house. They were certainly—and literally—after Hartnell's blood.

But we had no more time to stare and think frantically about means of extricating him, for more red guards commenced quickly to stride across the clearing towards us and we both dived into the undergrowth.

"Up those trees!" I exclaimed. "Hide among the foliage!"

"Don't forget they can climb, too."

"If they don't see us. . . ."

Viciously I kicked footholds in the soggy bark of a huge trunk, scrabbling against rotten, flaking cork cambium in

order to grasp a knotty projection and heave myself to the nearest branch. Thanks to the gravity-reactor, I was soon perched fifty-odd feet in the air beside Tubby, able cautiously to part the foliage and peep down at guards scurrying and rustling in search of clues. I thought of tell-tale marks left by my boots on our particular tree trunk and my heart missed a beat. One red orchid passed suspiciously near-by, but a "present from Zembola" in the form of a couple of small stones sent him on his way—either scared or convinced that the damage had been caused by previous debris falling.

"Well," said Tubby, "I never thought to be squatting on a branch like one of those confounded orchids. How's Hartnell getting on?"

Crowds round the pumping house seemed larger and more excited than ever. Someone—could it be Hankola, or possibly Mobrano?—had whipped up resentment against us so strongly that desire for vengeance prevailed even against the volcano's noisy terror.

Trees groaned and swayed in concert with the earth tremors and I could feel their immense roots straining and creaking in the effort of maintaining a grip. Hot, sulphurous rains fell more copiously, ripped from the skies by vast, vivid flashes of lightning whose accompanying thunder merged with noises of the eruption in an ear-cracking symphony.

"Can't you see what's happening?" asked Tubby, again. "This is getting us nowhere."

He never spoke a truer word. I wondered how it would all end.

Then came the most violent quake so far. The branch upon which we sat—farther round than a rocket engine's inlet port—bent and quivered. Across tortured earth lying between Murbanya and the pumping station zig-zagged a dark, irregular streak which rapidly widened and from whose depths emerged volumes of black smoke.

When the fissure finally ceased to widen we saw the ground to be cracked in roughly a three-quarter circle. Murbanya had become separated from the pumping house and also from ourselves by a twelve-foot wide abyss. A guard teetered desperately on the edge for a second, but he must



have been mortally injured and fell into the pit never to emerge.

Hartnell's escape route to the forest now lay through a seventy-yard gap between the ends of the fissure, fully forty yards of which were blocked by a mass of hot debris hurled down from the volcano. But any wild dash from the pumping station—lying more than fifty yards to the right—through that thirty-yard gap was precluded by the milling throng of excited orchids.

"Look," I said. "They've spotted the holes in the roof:"

Three guards tried to heave another of their number sufficiently high for him to grip the lowest roof girder. Four times they failed, but at a fifth attempt he succeeded in grasping some projection with which to haul himself up. As I watched him clambering slowly and cautiously to where an even blacker, irregularly shaped hole gaped in the dark glass roof there came to my mind again a picture of how another orchid, on an earlier occasion, had crept up a wall to where entrance might be obtained via a roof—only then the harbingers of death had been pink instead of flame-red.

"Do something, Pop," urged Tubby, in a throttled whisper. "For the sake of sweet Sirius, do something!"

Bereft of inspiration, I could only stare horror-stricken at the thing crawling along the roof. In a few more seconds it would spring into the shed where Hartnell had taken refuge. And then. . . ? Closing my eyes, I could not shut the fearful sight from my mind.

"Let's get down there," I muttered, feverishly, swinging a leg over the branch. "Let's get down there."

But in the instant that my toe groped for the lower foothold I saw, over the heads of that vengeful, clamouring mob, the pumping station door flung open. Orchids which were nearest, pressed forward by a surge of expectant rear ranks, ran to the opening—only to recoil, waving their long roots in obvious distress. Many others, mystified but eager, climbed ruthlessly over the mass of writhing, struggling bodies until within a few feet of the door, where they in turn collapsed and wriggled feebly to escape.

"What's he done?" demanded Tubby, excitedly. "He's up to another of his tricks."

"Search me!" I said.

Then Hartnell spoke over the inter-com. and I felt inexpressible relief, for he had ignored previous calls. "Where are you, Pop? I'm coming out. . . ."

"Hold it!" I yelled. "You'll never get through. There's hundreds more of the damned things waiting." Lightning flashed with brilliance so blinding that the filter-plate in my helmet-visor—provided to protect the eyes automatically against harmful flash-radiations of all kinds—snapped down momentarily. "Besides, the quake's opened a fissure in the ground. . . ."

Remainder of the sentence was made inaudible by thunder.

"What did you say, Pop?"

"A fissure—a fissure round the pumping station. . . ."

"Bless you!" he said, intoning a foolish, archaic superstition which was supposed to express sympathy with people who happened to sneeze. I knew, too, how he wore that particularly broad grin on his brown features.

"At a time like this . . ." I began, furiously, but he broke in again.

"I'll watch I don't fall into any crevasses, Pop. As for your little orchid playmates—well, they won't come near me!"

"What in Aldebaran does he mean?" asked Tubby.

I shrugged. "It's not the first time we've known that young so-and-so have something up his sleeve in a tight corner. Come on, let's see what it is."

Descent from the tree and a cautious pause, during which we strained our ears to detect against the uproar of Zembola's anger any movement of red guards searching the undergrowth, naturally caused delay. By the time we'd reached the ground and fought a way through jungle fringes to the clearing, Hartnell had left the pumping station and was halfway towards the escape gap. One arm clutched a large, oval gourd; with a second, in his other hand, he sprayed from side to side as he progressed a strange, silvery sub-

stance that sent back red and orange reflections to the fiery sky. The orchids scampered crazily to escape being splashed by this queer half-solid, half-liquid mixture, and when some tried to close in behind him and their roots rested where it had fallen they nipped back smartly in obvious distress.

"Are you all right?" I called over the inter-com.

"Doing fine, Pop." He chuckled in sheer delight.

"We'll make for the nearest tunnel—you remember, the one we left just before we sighted Murbanya. It must run near here."

"Go ahead. I'll be with you."

Tubby and I, with a final glance to see how he fared, struck once more into the forest, carving our way through lush, tangled undergrowth on the fringes, until we struck once more the rotten caverns deep beneath the high trees. From time to time Hartnell reported his own progress, announcing with delight that the orchids had had enough for the time being and were giving up the chase.

"Enough of what?" I asked, but he only chuckled again.

Earthquake shocks grew more frequent and more violent. Agitation by Topracht and his friends during our previous journey had brought down condensation upon us in showers; on this occasion tremors dislodged water after the fashion of a deluge. It gushed every few steps until the stinking, slimy compost beneath our feet became submerged and one's mind refused to grasp the fact that more could possibly be left to fall. A huge trunk, corroded through by damp-rot or fungus, added its quota to the terrible uproar as it crashed.

No light save the dim, yellow radiance beyond limits of the smoke-pall now shone from the sky of Orbis, so that the tunnels grew inky and we were obliged to switch on our beryllium torches, despite the risk that searching orchids might be attracted.

"Earn yourself a bonus, Pop," said Tubby, after suspicious rustlings had several times caused us to switch off hurriedly and stand panting in the darkness. "Suggest they fit these things with dimmers instead of straight on-off arrangements."

"Suggest it yourself," I said. "It's your idea."

But had it not been for specks of white light filtering through the foliage at ground level we might have found it difficult to locate Hartnell. At is was, brief negotiation over the inter-com. brought us quickly together with, I think, mutual relief and thanksgiving.

"Press on," said young Hartnell. "I've got a nasty idea they're still following me."

"I don't know what you did, but from the way they hopped back I can't imagine they love you any more than they did before."

"That's why I say—press on!"

Easier, however, to recommend such action than to bring it into effect. On the way to Murbanya we'd been guided by Topracht! now we groped alone in a maze of tunnels. Admittedly we progressed as accurately as possible by compass, but diversions became confusing. I remembered vaguely how earlier we had often almost doubled back along our tracks, sometimes striking off in a direction that might well have led us once more to the ship, only to find eventually that we moved slowly and tortuously towards the point where eventually we emerged on the volcanic slopes.

At length we halted in a forest cavern to draw breath and admit reluctantly that we were lost. Had Hamilton and Reddy, now speeding in the peeper towards *Old Growler*, remained on Orbis they could have laid on a direction beam from the repeater-unit. They were, however, safely away from this horrible planet—and none of us regretted the order we had given them to depart.

"What are we going to do?" asked Tubby, in a markedly depressed tone.

"What can we do?" I said.

Even Hartnell appeared nonplussed. "If we could only stumble on that place where we found the stone rods and broken glass. . . ."

"No hope of finding our own footprints, I suppose?"

He shone a torch on the watery surface of the compost. A muffled thunder of moving strata deep underground dislodged further cascades of water. "Washed away long ago."

"Except for calling the controller again and wishing him a fond farewell. . . ."

I broke off hurriedly and we all dived for shelter between trees forming the cavern's nearest wall, trying to force our bodies between the huge baulks of soaked timber. Simultaneously we had heard through other myriad sounds the soft "wish-swish" of orchid roots moving swiftly in our direction.

"Think these things can see in the dark, Pop?"

"Sh-sh! He's stopped over there—where the low tunnel leads into this space."

My eyes strained through the gloom, seeking a vague glimpse of flame-red guards—or a pale, loathsome executioner.

"It's a red one," whispered Tubby, and I caught my breath in horror. Discovery could not be long delayed.

We stood waiting uncounted minutes in the dripping gloom, wondering whether the thing or ourselves would prove to possess most patience.

"I can't stand this," said young Hartnell, at last. "I'm going to have a look at it. Get ready to dodge when I shine the torch."

His beryllium beam cut a great white swathe through the darkness, outlining a familiar orchid shape against the black, rotting tree trunks. And the colour of the shape showed pink. It was Topracht.

Except for their special colourings and slight individual differences in thickness of roots, one orchid appeared almost identical with any other. However, I knew instinctively who it was that stood before us, confirmed when I snapped open the Mattus rod and received messages of hair-raising urgency.

"They come!" gasped Topracht. "The guards and the executioners! Quick! Let me guide you!"

Responding to his instructions, I dived into a half-obscured tunnel on our left. Once again we crouched low to avoid catching our helmets against knotted roots and dead vines—some of them so closely resembling knotted feelers of the deadly pale executioners that half a dozen times I recoiled in alarm, thinking they were upon me.

Occasionally pausing to detect sounds of pursuit, we plunged on through the bewildering forest labyrinth, all of us except Topracht losing sense of direction completely. "Where are you taking us?" I inquired, finally, when we ran into a cavern big enough to use the Mattus without the antenna becoming entangled with vegetation.

"To your strange, shining palace, of course. If you are not safe there I can do nothing more to help. I saw from the forest, after we had been sent to investigate the arrival of the first peculiar machine, how your own palace descended through the clouds, throwing out fire in a manner as terrifying as Zembola himself. Will this palace rise into the air again, enabling you to reach your own planet and escape the vengeance of my people?"

It would, indeed. And the sooner we climbed into that peeper the better I'd be pleased.

"But you," I said. "What about you?" There was only one solution—which would also undoubtedly delight scientists at headquarters: Topracht must come with us? I broached the suggestion.

In reply, the Mattus machine emitted a firm but regretful resignation to fate. "For," said Topracht, "there would be none of my kind upon your world. I would be as much alone as one of you sentenced to remain among orchid people for the rest of his life. Moreover, my guilt regarding your comrades would prove a standing reproach against me. It is better, therefore, that I stay on Orbis."

"But if the guards ever learn that you aided us to escape. . . ."

"Oh, I shall not return to Murbanya. Indeed, Hankola's palace is no more—nor is Hankola!"

Topracht's first piece of news was inevitable. By the way Zembola was blasting the landscape only a very short time could have elapsed since our flight ere those showers of red-hot boulders smashed the brittle and hideous edifice to pieces. But Hankola, too?

"I was present when he died," said Topracht. "He heard how your friend was trapped in the pumping station and started out for the scene with the guards. I ran close

behind. Suddenly, huge splinters of glass crashed edgewise from the roof and our great Han'ola was no more—only a few writhing roots and pieces of quivering, purple flesh remained."

You will understand that, receiving this picture over the Mattus, I witnessed the whole, revolting scene almost at first-hand, with such startling clarity that I felt physically sick. Fortunately, the relief and diversion of our little party breaking at that moment through the trees into the wide, blackened trail scorched through the forest by our peeper's landing jets saved me from making a sad exhibition of myself. There, serene and shining despite the quaking earth, rested *Little Growler*.

"Believe me," said Tubby, "I've never been so pleased to see anything in my life."

"Wait!" said Topracht, urgently. "Wait! All is not well here. I will go alone to investigate." He crawled slowly forward across the wet, charred vegetation.

"What's this in aid of?" asked Hartnell.

"Topracht's suspicious about something—Altair only knows what."

We watched him proceed cautiously until scarcely ten yards from the ship's tail-fin. Events next happened so swiftly that only the quickest thinking enabled us to escape.

A flame-red guard and two white executioners dived suddenly upon Topracht from beneath the fin. There was no mistaking their deadly intentions. The pink messenger scuttled zig-zag between burnt tree stumps, paused a moment to turn his trumpet-shaped head in our direction—I would swear, too, that he signalled with a long, trailing root—then shot off as fast as he could go towards the high forest.

"He's deliberately leading 'em off!" yelled Hartnell. "Come on! Now's our chance!"

Pounding along with every ounce of effort, we clawed and stumbled our way towards *Little Growler*. Not until too late did Topracht's pursuers pause, realising how they had been deceived.

Last in through the midships entrance port, I looked back beyond *Little Growler's* tail, my hand on the button

ready to close the airtight door. In recent excitement we had failed to notice how Zembola's thunder had increased to furious diapason, so that vibrations of the eruption itself, in addition to the frequent violent tremors, became terrifyingly evident, even at this distance. In its resting place, I felt the ship trembling in sympathy.

"All ready at your end, Pop?" came Hartnell's voice. "I'm going to take off before this crate's shaken to pieces."

"I'm trying to see Topracht. . . ."

From the edge of the forest, bright in the still-gathering gloom, came a brief flutter of mingled pink, red and white, like a tangle of butterflies at twilight. Then the cluster divided itself, red and white separating and moving to one side. The pink pieces remained motionless.

"Port closed," I announced over the inter-com. "Ready for take-off."

Then I lowered myself feebly to the floor, removed my helmet and buried my moist face in my hands.

I knew that when Hartnell pressed the button so that atomic jets in *Little Growler's* tail blasted us free from Orbis their consuming fire would simultaneously reduce both guards and executioners to a crisp. Admittedly, this would do little good to poor Topracht—whom I, at least, willingly forgave for killing Weber and Billson in his plant-like ignorance—but it effected a primitive justice that I found particularly satisfying and which would certainly not figure in any report to the controller.

A few minutes later we had reached sufficient height to view Zembola's anger in all its magnificence. The smoke pall previously viewed from below now spread out beneath us, irregularly shot with fire from the great crater and lit by lightning flashes. We saw how mighty forest trees bent and swayed like a great, dark sea under the fury of storm and earthquake.

"Wonder how many orchids will escape that little lot," remarked Tubby. We stood beside Hartnell, who was not yet able to leave the pilot's seat, staring fascinated into the



forward visor-screen as the scarred face of Orbis grew rapidly smaller.

"They'll find it a bit warmer than they did," commented young Hartnell. "Not that I've got a great deal of sympathy for 'em—except Topracht. Anyhow, you said they like it warm, didn't you, Pop?" He chuckled. "I gave 'em a cool enough reception outside the pumping station!"

"Ah," said Tubby, "that reminds me—just what did you do to keep 'em at arm's length?"

Hartnell chuckled and idly flipped a couple of switches. It made my blood run cold to see how casually and light-heartedly he regarded his duties as pilot. "It was ready-made. Remember how they pumped ammonia and water from the underground lake? The stuff came up under pressure into those coils of fibre tubes. And what pressure! I poked around, seeing what I could find. . . ." He had a peculiar and irritating gift for understatement. ". . . when I knocked a plug from the pipe—only a small plug, but the jet of stuff that shot out was strong enough to knock me head over heels. When I got up and tried a whiff at the test-valve to see what it was, the stink nearly finished me off. It was ammonia, all right!"

Tubby and I looked blank. "What of it?"

He stared pityingly for a moment, then grinned. "Don't you remember how crudely they refrigerated meat hundreds of years ago?"

When I said, rather bitingly, that we were neither physicists nor historians, he sniffed deprecatingly and made my heart leap into my mouth again by airily slapping down more switches, so that *Little Growler* lurched alarmingly.

"Let me tell you ignorant so-and-so's that when any liquid evaporates into gas it sucks heat out of the atmosphere and anything else within reach. You'll understand, of course, that I'm putting it into colloquial language because. . . ."

"Oh, get on with it!" said Tubby, impatiently.

"That stuff coming from the lake," continued Hartnell, unperturbed, "was certainly ammonia and water. Under pressure the ammonia remained liquid; out of the pipes it

vaporised. I tell you, in less than a couple of minutes the temperature in that pumping house had dropped below zero and I was sliding around in a mass of ice and cold water. You'd have laughed, Pop."

"I doubt it!" My sense of humour sometimes isn't very acute.

"Then I remembered how you'd said one thing many types of orchids didn't like was a cold draught. So I slid open the pumping house door to prove it."

"Lucky for you they were the right sort."

He grinned. "Yes, wasn't it? They popped their noses in, but as soon as they got 'em frost-bitten they popped 'em right out again. Then I knew everything was fine, scooped up a few gourdfuls of ice and water and ammonia and ran out, scattering the stuff as I went. Not one of 'em even touched me."

I stared again into the visor-screen. Almost half a hemisphere now lay revealed, while across the top of the screen the planet's curve had become easily visible. Zembola still spat glowing lava through the layer of billowing black smoke, leaving to the imagination little of the dreadful scenes that must be taking place below.

And then, before our horrified gaze, an entire section of the planet seemed to lift itself for a moment into the smoke pall and break into pieces while still suspended, and from between the debris huge tongues of fire leapt to an incredible height. Titanic steam-pressures, generated by that subterranean lake finally breaking through weakened strata into the crater's white-hot depths, had blown Zembola, the wreckage of Murbanya and the "civilisation" of the orchids into nothingness.

I stepped back from the screen and drew a deep breath.

Even Hartnell, I think, felt suitably subdued by the spectacle, but whatever his innermost feelings he turned his head and grinned. "Look on the bright side, Pop. If headquarters thought any orchids were left they'd send a squad of botanists back there to work for months making a detailed report—and one of 'em might have been you!"

THE END

# quiz

*Conducted by W. W. BYFORD, B.Sc.*

Of several interesting answers to the question in issue No. 6, after careful but by no means easy selection, I award the guinea to F. Scott of Elm Grove Road, Barnes, S.W.13.

A better treatment of the first part of the question was submitted by G. Wilson (Birmingham) but his second part was further theory; not a projected proof. Other entrants gave fascinating proofs but no theory of origin.

An answer based on transit of a rocket through a lateral lunar shadow fell down because it postulated that the rocket could be observed visually entering and leaving the shadow. Apart from the enormous difficulty of this method, it would not necessarily differentiate between basin and pear-drop shapes.

A fault in Scott's answer is the omission of means of locating the returned cameras. Flares, floats and radioactive material incorporated in the parachutes would have enhanced the experimental data. Anyway, here is the winning answer.

"Assuming the origin of the Earth to be a liquid mass thrown off the Sun, I should say the other surface of the Moon is pear-shaped. The following observations are the reasons for my assumption.

"High speed photography of a drop of liquid leaving a source show that it is pear-shaped when first formed and on breaking away is followed by a much smaller pear-shaped drop. Surface tension causes a pear-shaped drop of liquid to become spherical.

"When the Sun lost a drop, this took place and it was probably at a very high temperature, and the larger portion gained spherical shape before cooling to form a solid body known as the Earth. The smaller portion, due to its size, in my opinion, cooled much more rapidly and solidified while still in its pear-shaped form and became the Moon.

"The proof of this will come when scientists have improved the rocket recording apparatus. Rockets have, I believe, been

fired carrying recording apparatus and photographic apparatus to record the reading when the rocket has reached its maximum height, and the photographs return to Earth by means of parachutes.

"An experimental, unmanned rocket will go behind the Moon and return to Earth. The cameras will function when passing behind the Moon when it is between Earth and Sun, so that the far side is lit by the Sun. On return of the rocket to the Earth's atmosphere the camera will be released on parachutes. I expect to find my theory correct."

## speaking of atoms

*A further article in our Atomic Theory Series*

Atoms in a solid have so far been considered as all alike, but this is only true of certain substances and these are in a very small minority. They are the so-called *elements*.

These are substances which were earlier recognised as incapable of division by ordinary chemical means into other substances. Nor could they be made up of other substances. The atomic theory later gave true meaning to the word "element," i.e. it is a substance containing atoms of only one kind.

Phosphorus, sulphur, carbon and most metals are examples of solid elements. Many of these show the familiar phenomenon known as allotropy. *Allos* is Greek for "other"; *tropos* means "turn." We shall see later how suitable the name is, since atoms indeed turn to form allotropes.

We saw last time how forces between atoms determine the crystal lattice, how atoms gain extra movement with rise in temperature, and that solids expand because spaces between atoms increase. Now, as the distance between two atoms increases, the force between them decreases. As the temperature of a crystal is increased, there comes a point when new forces at new distances break down the crystal lattice. In many cases the atoms then turn from one crystal lattice to another. The element, without any change in the atoms themselves, takes on a new crystalline appearance.

Elements which can thus exist in more than one crystalline form are said to be allotropic. The different forms are allotropes of that element.

When the fine yellow powder sold as "flowers of sulphur" is carefully heated to  $115^{\circ}\text{C}$ ., it forms a clear liquid which on cooling solidifies in needle-like crystals of so-called prismatic sulphur. If flowers of sulphur is dissolved in volatile carbon disulphide, the solvent rapidly evaporates at room temperature and quite different crystals of rhombic sulphur are deposited.

The spacing of sulphur atoms at temperatures higher than  $95^{\circ}\text{C}$ . is such that the prismatic crystal lattice is formed. At lower temperatures the rhombic lattice forms. Prismatic crystals kept at ordinary temperatures slowly change to rhombic sulphur.

The time factor is often important in crystal formation. The liquid formed when sulphur melts at  $115^{\circ}\text{C}$ . is yellow, but if the temperature is steadily increased, atomic grouping changes to give a red liquid, then a black liquid. If this is poured into cold water to cool suddenly, it sets to form a black rubber-like material known as plastic sulphur. It consists of sulphur atoms which have been slowed down, but have not had time to arrange themselves into any crystal lattice. Such a material is called a supercooled liquid.

Plastic sulphur gradually changes to yellow rhombic sulphur as the atoms pull one another into larger crystal lattice groups.

Carbon has two allotropes, each of which is stable over a wide range of temperature. In one allotrope each atom is held by four others arranged about it at the points of a regular tetrahedron, giving enormous cohesion in all directions. This allotrope is the diamond. Hence the hardness of diamonds.

The other allotrope is graphite, in which each atom is one of a flat ring of six. These rings cohere in flat plates but are loosely attached to rings above and below them, so that graphite is cohesive in only one plane. That is why pencil lead, made of graphite and clay, rubs off easily but adheres to the paper. Hence, also, the lubricating properties of graphite.

Graphite dissolved in molten iron and cooled in molten lead produces small but true diamonds artificially. Soot, lampblack, charcoal, coke, are forms of carbon in which both diamond and graphite crystals may be present, but not even in microscopically recognisable units. Nor, unfortunately, do they grow with time. A one-carat diamond contains ten thousand trillion atoms.

"CHEMICUS"



## science news

Uranium is being recovered from gold "tailings"—a waste product from South African gold ores. Although the amount of Uranium in the ore is small, so much is mined that a significant quantity will be obtained.



*The United States Atomic Energy Commission has reported the first chemical separation of minute quantities of Plutonium from Belgian Congo pitchblende. Plutonium was detected in natural minerals some years ago and was, of course, the first artificial element prepared in atomic piles.*



At the American Chemical Society's 118th national meeting it was announced that foods and drugs can be sterilised and

effective vaccines produced by the use of high-speed electrons.

A machine called a capacitron is used for firing bursts of electrons lasting one-millionth of a second into foods, bacteria and viruses.

Meat, fish, fruit, vegetables and dairy products can be sterilised to such a degree that they keep for up to four years without refrigeration. A highly potent vaccine for rabies has been produced in a similar manner.



*Australia's first cyclotron will occupy the basement of the School of Physical Sciences at the proposed National University to be set up in Canberra. Much of the equipment for the cyclotron will be made in Australia, including the 1,400-ton*

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## SCIENCE FICTION MONTHLY

*In answer to many queries the  
following stories have appeared:*

<b>No. 1 MUSHROOM MEN FROM MARS</b>	<i>by Lee Stanton</i>
<b>No. 2 RECONNOITRE KRELLIG II</b>	<i>by Jon J. Deegan</i>
<b>No. 3 GOLD MEN OF AUREUS</b>	<i>by Roy Sheldon</i>
<b>No. 4 OLD GROWLER</b>	<i>by Jon J. Deegan</i>
<b>No. 5 SEVEN TO THE MOON</b>	<i>by Lee Stanton</i>
<b>No. 6 PHANTOM MOON</b>	<i>by Roy Sheldon</i>
<b>No. 7 ENERGY ALIVE</b>	<i>by Roy Sheldon</i>
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### SCIENCE FICTION MONTHLY

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magnet. But England will supply the rest and Professor M. L. Oliphant will supervise the installation of the cyclotron.



American golfers who lose their balls will soon be using Geiger counters to find them. The Goodrich Chemical Corporation has developed a golf ball with a minute amount of radioactive material under its cover. It is hoped that this will solve the problem of the "ball in the rough." Counters suitable for the purpose are sold at \$54.



According to Frederick Reines of Los Alamos Laboratory, it seems unlikely that atomic explosions will find any peacetime use. Although they

would be useful in breaking up small icebergs, they would be ineffective as agents for melting ice—one bomb could melt a sphere of only about 200 feet in diameter. Many bombs would be needed to blast even part of a mountain, and if the fission products are retained in a small region a dangerously high level of activity will last for months.



The existence of yet another subatomic particle—the dineutron, or double neutron—was recently reported in *Physics Today* as being practically proved. A 2½-million-volt electrostatic generator at Los Alamos Scientific Laboratory showed an emission of alpha particles coming off at an angle that indicates the existence of dineutrons.

## books

I, ROBOT, comes from Gnome Press at \$2.50. Written by one of America's ace science fiction authors (Isaac Asimov) the book is a series of eight robot stories reprinted from *Astounding Science Fiction* and one from *Super Science Stories*. Adult, intelligent and extremely plausible, the stories in this book make you think not once but several times about robots.

DWELLERS IN THE MIRAGE has been printed so many times by so many people that there can hardly be anybody who has not heard of this A. Merritt classic. While not strictly science fiction, the book poses many a problem that will tickle the fancy of the dabbler in psychology. Creepy in places, too. It is published by The Grandon Company at \$3.00.

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